THE ORCHID ALBUM.

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THE

ORCHID ALBUM,

MISSOURI
BOTANICAL
GARDEN.

COMPRISING

COLOURED FIGURES AND DESCRIPTIONS

OF

NEW, RARE, AND BEAUTIFUL

ORCHIDACEOUS PLANTS.

CONDUCTED BY

ROBERT WARNER, F.L.S., F.R.H.S.,

AUTHOR OF SELECT ORCHIDACEOUS PLANTS,

AND

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AUTHOR OF THE ORCHID-GROWERS' MANUAL, ETC.

THE BOTANICAL DESCRIPTIONS BY

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THE COLOURED FIGURES BY JOHN NUGENT FITCH, F.L.S.

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DEDICATED

BY SPECIAL PERMISSION

TO

H.R.H. The Princess of Wales,

BY

HER ROYAL HIGHNESS'

Very obedient and humble Servants,

ROBERT WARNER,

BENJAMIN S. WILLIAMS.

INDEX TO PLATES.

	PLATE
AËRIDES LAWRENCIÆ, *Rchb. f.*	270
BRASSAVOLA DIGBYANA, *Lindl.*	241
CATTLEYA MARDELLII, *Rchb. f*	287
CATTLEYA MOSSIÆ, *Hook*	246
CATTLEYA SPECIOSISSIMA BUCHANANIANA, *Williams and Moore*	261
CATTLEYA TRIANÆ DODGSONI, *Williams*	249
CATTLEYA TRIANÆ HOOLEANA, *Williams*	265
CATTLEYA TRIANÆ MASSANGEANA, *Rchb. f.*	242
CŒLOGYNE DAYANA, *Rchb. f.*	247
CYCNOCHES CHLOROCHILON, *Klotzsch*	263
CYMBIDIUM GIGANTEUM, *Wallich*	284
CYPRIPEDIUM INSIGNE PUNCTATUM VIOLACEUM, *O'Brien*	278
CYPRIPEDIUM SELLIGERUM, *Veitch*	255
DENDROBIUM FALCONERI GIGANTEUM, *Hort.*	257
DENDROBIUM PRIMULINUM, *Lindl.*	286
DENDROBIUM TREACHERIANUM, *Rchb. f.*	288
DENDROBIUM WILLIAMSIANUM, *Rchb. f.*	252
GALEANDRA BAUERII, *Lindl.*	267
HABENARIA MILITARIS, *Rchb. f.*	281
LÆLIA AMESIANA, *Rchb. f.*	253
LÆLIA ANCEPS PERCIVALIANA, *Rchb, f.*	256
LÆLIA ELEGANS WOLSTENHOLMIÆ, *Rchb. f.*	285
LÆLIA PURPURATA RUSSELLIANA, *Williams*	269
LÆLIA SUPERBIENS, *Lindl.*	244
LISSOCHILUS KREBSII PURPURATUS, *Ridley*	259
LYCASTE DEPPEI PUNCTATISSIMA, *Rchb. f.*	262
LYCASTE SKINNERII REGINÆ, *Williams*	283
MASDEVALLIA IGNEA MASSANGEANA, *Williams*	273
MASDEVALLIA ROEZLII RUBRA, *Hort.*	243
ODONTOGLOSSUM ASPERSUM, *Rchb. f.*	245
ODONTOGLOSSUM CERVANTESII DECORUM, *Rchb. f.*	251
ODONTOGLOSSUM ALEXANDRÆ REGINÆ, *Hort.*	264
ODONTOGLOSSUM LUTEO-PURPUREUM MAGNIFICUM, *Williams and Moore*	254
ODONTOGLOSSUM PARDINUM, *Lindl.*	274
ODONTOGLOSSUM POLLETTIANUM, *Hort.*	280
ODONTOGLOSSUM POLYXANTHUM GRANDIFLORUM, *Williams*	258
ONCIDIUM PAPILIO MAJUS, *Rchb. f.*	279
ONCIDIUM STELLIGERUM ERNESTI, *Williams*	260
ONCIDIUM SUPERBIENS, *Lindl.*	276
PHALÆNOPSIS GRANDIFLORA, *Lindl.*	277
PHALÆNOPSIS ROSEA, *Lindl.*	268
SACCOLABIUM HENDERSONIANUM, *Rchb. f.*	275
SOBRALIA LEUCOXANTHA, *Rchb. f.*	271
SOBRALIA XANTHOLEUCA, *Hort.*	250
TRICHOCENTRUM ORTHOPLECTRON, *Rchb. f.*	272
THRIXPERMUM UNGUICULATUM, *Rchb. f.*	266
VANDA CŒRULEA, *Griffith*	282
VANDA DENISONIANA HEBRAICA, *Rchb. f.*	248

INDEX TO NOTES AND SYNONYMS.

	UNDER PLATE
Bletia Digbyana, *Rchb. f.*	241
Bletia superbiens, *Rchb. f.*	244
Cattleya Amesiana, *Hort.*	253
Cattleya labiata Mossiæ, *Lindl.*	246
Cymbidium iridioides, *Hort.*	28
Cypripedium insigne Chantinii, *Hort.*	278
Cypripedium Spicerianum, Mr. Walker's	260
Dendrobium nobile pallidiflorum, *Hook*	286
Dendrobium Williamsianum, *Rchb. f.*	241
Epidendrum labiatum Mossiæ, *Rchb. f.*	246
Habenaria pusilla, *Rchb. f.*	281
Lælia Russelliana, *Hort.*	269
Lycaste Skinnerii, two-flowered spike	272
Obituary, Mr. Thomas Moore	271 & 272
Odontoglossum crispum Reginæ	264
Odontoglossum hystrix magnificum, *Hort.*	254
Orchid Habitats	245
Orchids at Birchfield, Manchester	266
Orchids at Mr. Tautz's, Hammersmith	268
Orchids at Pickering Lodge, Timperley	265
Orchids in Flower at Gouville	283
Orchid Selection.	253
Orchid Variability	256
Phajus Humblotii	241
Phalænopsis equestris, *Rchb. f.*	268
Phalænopsis Ruckeriana, *Hort.*	266
Phalænopsis, well grown, Mr. Partington's	267
Sarcochilus unguiculatus, *Lindl.*	266
Stauroglottis equestris, *Schauer*	268

J. Nugent. Fitch. del et lith.

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BRASSAVOLA DIGBYANA

BRASSAVOLA DIGBYANA.

[Plate 241,]

Native of Honduras.

Epiphytal. *Stems* somewhat clavate, compressed, consisting of three or four joints, the internodes clothed with pallid membranaceous sheathing scales. *Leaves* thick, fleshy, solitary, elliptic, obtuse, keeled behind, of a glaucous green colour. *Peduncles* terminal, one-flowered, issuing from an elongated compressed sheath, which rises from the base of the leaf. *Flowers* deliciously fragrant, very large, fully five inches across, with the parts spreading; *sepals* oblong, spread out in the form of a triangle, pale yellowish green, sometimes tinged with purple, and marked with a few slight lines or striæ; *petals* similar, but somewhat broader and of a paler tint of green, widely spreading; *lip* very large, thick and solid, stalked, cordate cucullate, surrounding the column, three inches wide and three and a half inches deep, emarginate, of a creamy white colour, purplish at the apex, with a large green tubercle on the disk, indistinctly nervose, and margined, except at the very base, by a close series of dichotomous filaments from one-half to three-fourths of an inch in length, forming a continuous and highly characteristic fringe to this portion of the flower. *Column* stout, semiterete, winged, the stigma three-furrowed, the anther bed bearing at the back an incumbent pointed tooth.

Brassavola Digbyana, *Lindley, Botanical Register*, 1846, t. 53; *Hooker, Botanical Magazine*, t. 4474; *Van Houtte, Flore des Serres*, t. 237; *Williams, Orchid-Grower's Manual*, 6 ed., 148.

Bletia Digbyana, *Reichenbach fil.*, in *Walpers' Annales Botanices Systematicæ*, vi., 422.

The Brassavolas form a small genus of Orchids, of which, that which we now figure is the best that has come under our notice, as regards its blossoms. It is also the most curious species we have met with, its fringed lip presenting a very peculiar appearance, such as one seldom sees in Orchid flowers. Our drawing was taken from a well-grown plant in the fine collection of R. H. Measures, Esq., The Woodlands, Streatham.

Brassavola Digbyana is a compact evergreen species, growing about six inches in height, and having the pseudobulbs stem-like and compressed; each stem bears a solitary glaucous leaf, which issues from a small sheath, one of which terminate each of the well-developed stems. The flowers are five inches in width and six inches in depth; the sepals and petals being oblong and spreading, of a pale green colour with a purplish tinge, while the cordate cucullate lip is of a creamy white tinged with purple at the tip. The whole margin of the lip is deeply and beautifully fringed with dichotomous filaments nearly three-quarters of an inch long.

It produces its flowers, which are deliciously fragrant, during the winter months, and remains in beauty from two to three weeks.

This *Brassavola* will thrive well on blocks, but grown in this way it requires more than usual attention, as regards moisture at the roots. It will also thrive well in baskets or pans with good drainage, and rough fibrous peat with live sphagnum moss will form a suitable medium for the roots. The baskets or pans must be suspended from the roof where the plants will receive as much light as is possible, in order to ripen the stems and leaves, so that they may bring forth blossoms in perfection. If not well cultivated the plants will not flower. We find them to thrive well in the Cattleya house, where they obtain but a small proportion of shade. They must be kept moist at the roots during the period of vigorous growth, and when that is completed just enough must be given to keep their stems and foliage in a plump condition.

At the meeting of the Royal Horticultural Society held at South Kensington on July 13th, the following distinct New Orchids were exhibited, and were awarded First Class Certificates :—

Dendrobium Williamsianum.—A distinct and handsome species, introduced by us from New Guinea. It has large flowers which are furnished with pure white sepals and petals, and a *scoop-shaped lip* of a deep magenta-purple. This plant was first described by Professor Reichenbach in the *Gardeners' Chronicle* in 1878. We hope at some future time to present our readers with a figure of this novelty.

Phajus Humblotii.—A very distinct and beautiful species from Madagascar, exhibited by Sir T. Lawrence, Bart., M.P. It produces erect spikes of from six to eight flowers, of which the sepals and petals are of a pale rosy crimson, and the lip deep rosy crimson of a dullish hue.

J.N.Fitch. del. et lith.

CATTLEYA TRIANÆ MASSANGEANA.

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CATTLEYA TRIANÆ MASSANGEANA.

[Plate 242.]

Native of New Grenada.

Epiphytal. *Stems* oblong clavate, furrowed, the lower parts enveloped in pale-coloured membranaceous sheaths. *Leaves* solitary, ligulate-oblong, narrowed to the shortly acute apex, coriaceous in texture, dark green, sometimes tinged with red. *Scape* or *peduncle* two-flowered, issuing from an oblong compressed, reddish cinnamon-coloured sheath at the base of the leaf and terminating the stem. *Flowers* of medium size, measuring about five inches across, curiously purpureo-striate; *sepals* lanceolate acute, entire, spreading, longitudinally banded and striped with purplish magenta; *petals* ovate, the basal part plane, the front part much undulated, variously striate in the direction of the venation (*i.e.*, flabellately) with deep rosy purple, or purplish magenta, the stripes more confluent towards the centre, forming a heavy line of colour enlivened by a white bar along the costa; *lip* two and a half inches long, the base closely rolled in, rosy purple, striped diagonally with deeper purple, the throat streaky orange flushed with pale rose, the rounded anterior lobe wavy, an inch and a half across, having a creamy bar passing up the centre through a series of veins of deep magenta which run outwards into closely set lines of the same colour reaching nearly to the pale whitish, narrow, neatly undulated margin. *Column* enclosed.

Cattleya Trianæ Massangeana, *Reichenbach fil. MS.*

We have from time to time figured several varieties of *Cattleya Trianæ*, many of them being very brilliant and attractive in colour and superb in form. There are no species of *Cattleya* among which greater variations of colour occur than in this now before us, nor any that are more useful for the winter decoration of our Orchid houses. The charming variety which we here figure, and which will be seen from the plate to be one of a most beautiful and distinct character, when first made known, was quite different from any other we had previously met with; it was first flowered by Monsieur D. Massange, Château de Baillonville, Marche, Belgium, and is named in honour of that gentleman. Subsequently it was flowered by Sir Trevor Lawrence, Bart., M.P., who was kind enough to send us flowers, which we found to be identical with those from M. Massange. It is a very rare plant, and may keep so, for we seldom find such a thoroughly marked variety as this even among the most variable species of *Cattleya*.

Cattleya Trianæ Massangeana is an evergreen plant, which in its growth resembles the typical *C. Trianæ*. The sepals and petals are of a pale rose colour, beautifully blotched and barred with rose-purple, and the yellow-throated lip is striped with the same colours. The plant blooms during the winter season.

This variety requires the same treatment as the parent species, a subject on which we have often remarked in our previous volumes. We may, however, here state that we have never seen Cattleyas grown as they are in the establishment of M. Massange, who has a span-roofed house filled with various forms of *C. Trianæ*, *C. Mossiæ*, *C. Mendelii*, *C. Warneri*, and others which have such vigorous roots that one could safely hold up the plants by their leaves, many of them having retained their roots fresh and sturdy for four or five years. The retention of these roots must prove to be a great support to the plants, and no doubt secures a large amount of vigour in their growth. When we saw them their flower sheaths were broad and of great length, the flower spikes were beginning to show their robust buds in the sheath, and since then they have produced some hundreds of flowers. Many of the plants of *C. Trianæ* were in full bloom, and were most wonderful examples of good cultivation. All the Cattleyas at the Château de Baillonville seem to be treated in the same way. They are grown on stages, not far from the glass, it being a low house in which they are kept. They are allowed a good season of growth during summer, with a moderate supply of water, but are never kept very wet at any time. When their growth is completed very little moisture may be given, and that only when they are supposed really to require it, and this must be applied with great care. These plants are well drained, and good fibrous material is given them, which consists of the roots of the common *Polypodium vulgare*, collected from the rocks and hills where it has been growing for ages—the fine material being taken away, and only the fibrous part used. We have never seen a more useful material, the good results it produces, not only with Cattleyas, but with Odontoglossums, Oncidiums, Masdevallias, &c., being the best proof of its suitability. We never give advice without good reason for doing so, but we cannot refrain from remarking that anyone desirous of seeing these wonderful plants should go and inspect them for themselves; we can assure them of a hearty welcome, as M. Massange is always pleased to see any persons who are interested in Orchid culture.

MASDEVALLIA ROEZLII RUBRUM.

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MASDEVALLIA ROEZLII RUBRA.

[Plate 243.]

Native of New Grenada.

Epiphytal. *Stems* tufted, numerous, springing from the crown, slender, clothed at the base with sheathing truncate bracts, and supporting either leaves or flowers. *Leaves* oblong acute, narrowed towards and sheathing at the base, evergreen, six to nine inches long. *Scapes* erect, as thick as a straw, six to eight inches long, green, with sheathing bracts below, a larger boat-shaped keeled spathe just below the flower, the end hooked, and a smaller subulate one produced from the opposite side, the end of the scape below the sharply decurved ovary swollen and rounded off. *Flowers* solitary, expanded, remarkable for their size and form, in which they resemble *M. Chimæra*; *sepals* three, connate at the base, triangular, with a chocolate-red tail-like continuation of the apex about four inches long, creamy yellow, heavily mottled transversely with deep chocolate-purple, the inner surface scabrous; each sepal is fully three-fourths of an inch wide and about two inches long in the broader part, then narrowing suddenly into the wholly dark red brown tail-like filiform apex; *petals* small, narrow, rounded at the tip, as long as the column, pale fawn with a purple spot near the end; *lip* pinkish, tongue-shaped, roundish oblong in front, with inflexed edges, and several longitudinal ribs inside. *Column* decurved, shorter than the lip.

Masdevallia Roezlii rubra, *of gardens; Williams, Orchid-Grower's Manual*, 6 ed., 398.

We have here another curious form of *Masdevallia* allied to the *M. Chimæra* figured in our fifth volume at Plate 203, and like it, one of nature's most wonderful productions. The genus is a large one, abounding in its native habitats, and affording considerable variety in the way of species, of which many may be seen growing together on the same trees, their differently coloured blossoms moving in the breeze, having the appearance of insects on the wing. Many known species occur in Central and Tropical America; indeed, more than one hundred species have been discovered during the past few years. There are, of course, amongst these many small and diminutive yet beautiful kinds, which are chiefly interesting to the botanist and amateur, but by the aid of the microscope these are often found to present charms that cannot be seen in any other way, and which, if not seen, could surely not be imagined. There are also many large-flowered kinds which are brilliant in colour, and held in high esteem by orchidists. The variety we now bring before our readers is a most charming plant. Our figure was derived from a well-grown specimen in the collection of W. Vanner, Esq., Camden Wood, Chislehurst.

Masdevallia Roezlii rubra is a handsomer form of the typical *M. Roezlii*, being

of a brighter colour in the flower. It is an evergreen plant of neat compact growth, with dark green foliage, about six inches high. The erect flower scapes are six to eight inches in length, and bear, each singly, the large wide-spread flowers, the three triangular sepals constituting the conspicuous parts of which being only connate at the very base, and each of them being tipped by a chocolate-red tail-like filament three or four inches long. The general ground colour of the flower is creamy yellow, transversely mottled with dark chocolate-red, the inner surface being scabrous. The minute inconspicuous petals are narrow, rounded at the top, of a pale fawn colour with a purple spot near the end, and the lip is of a pale pink colour, and tongue-shaped. This plant flowers again from the same scape after considerable intervals, so that the old spike should be left on, as it is interesting to watch the new blossoms as they appear.

The species of this class of Masdevallias do well in small baskets, made boat-shaped, and suspended from the roof of the house; the material used about the roots should be rough fibrous peat and live sphagnum moss. They should be kept moist during the growing season, in fact they should never be allowed to get too dry as they have but little material within themselves from whence to derive support, which makes it all the more necessary to give them careful attention at all times. They are, however, of easy culture if they get their wants supplied.

These plants should be kept shaded from the sun; they do not like that luminary to shine on their foliage, as this causes it to spot, which greatly disfigures them. The cool Odontoglot house suits them, as here they can get fresh air every day and night. If the temperature will admit of it there should always be sufficient heat kept up to allow of ventilation at all times, as this change of air is particularly beneficial to them. The plants must always be kept free from insects. The thrips will sometimes make its appearance on the centre of the leaf, and will soon disfigure the plant by turning the foliage black; its attacks are also very detrimental to the growth of the plants, causing them to become less vigorous. When the insects make their appearance no time should be lost in dislodging them, as delays are dangerous. Fumigation with tobacco-smoke is the best remedy, but this operation must be carried out with great care and judgment.

J. Nugent. Fitch del. et lith.

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LÆLIA SUPERBIENS.

LÆLIA SUPERBIENS.

[Plate 244.]

Native of Guatemala and Mexico.

Epiphytal. *Stems* oblong fusiform, from six or eight inches to a foot or more in length, clothed with sheathing membranaceous pale-coloured scales, diphyllous. *Leaves* oblong acute, six to nine inches long, of a rigid leathery texture, and deep green colour. *Scape* terminal, very long, four to five feet in length, or sometimes even reaching to eight or ten feet, clothed with pallid sheathing scales, and bearing at the extremity a clustered raceme of from fifteen to twenty flowers, which have a richly coloured lip. *Flowers*, each subtended by a large brown lanceolate bract as long as the ovary, six to seven inches in expansion, the narrowish sepals and petals spreading out like a star; *sepals* narrow linear-lanceolate, entire, tapered to the base, of a delicate rosy blush, with a white central bar at the lower part; *petals* similar both as to form and colour, yellowish green below, sometimes a trifle broader, wavy; *lip* oblong, panduriform, three-lobed, the lateral lobes short, meeting over the column, which they exceed in length, the apex deep rose elegantly veined with deeper rose-crimson on the inner side, the front lobe very much longer, oblong obtuse, much undulated, deep rosy crimson, veined throughout the margins and apex with darker crimson, the centre or disk bearing five thin elevated denticulated yellow lamellæ which form an oblong crest truncate in front, and extending half the length of the lip. *Column* decurved semiterete, scarcely thickened upwards, pale greenish purple towards the base, more rosy at the tip.

Lælia superbiens, *Lindley, Botanical Register*, 1840, misc. 87; *Id.*, 1842, under t. 62; *Bateman, Orchidaceæ of Mexico and Guatemala*, t. 38; *Hooker, Botanical Magazine*, t. 4090; *Van Houtte, Flore des Serres*, tt. 1178-79; *Warner, Select Orchidaceous Plants*, i., t. 20; *Paxton, Magazine of Botany*, xi., 97 with tab.; *Williams, Orchid-Grower's Manual*, 6 ed., 368.

Bletia superbiens, *Reichenbach fil., Xenia Orchidacea*, ii., 46; *Id., Walpers' Annales Botanices Systematicæ*, vi., 418.

The subject of the accompanying illustration, which is a very old inhabitant of our stoves, is also one of the most noble Lælias we have in cultivation. We recollect well the grand massive specimen that was sent home by Mr. Hartweg to the Horticultural Gardens, at Chiswick, and which sometimes produced nine spikes of its beautiful flowers, the scapes being at least seven feet in height, and the whole plant presenting a truly noble appearance. We have not seen such a specimen before or since. It is a large growing plant, but is worth all the room it takes up, especially in such houses as are in these day's built for large growing Cattleyas and Lælias. The fact that this is a winter flowering plant makes it all the more valuable, and when placed on the stage the long scapes throw out the flower spikes over the

Orchids below, producing a feature of floral grandeur which must be seen to be appreciated. Some growers object to Orchids which bear their flowers on long spikes, but we find them useful in producing a striking effect in staging the plants, as the flower spikes can then be brought to any point at which it may be required to introduce them.

Our artist's drawing was made through the kindness of W. H. Smee, Esq., The Grange, Carshalton, where there is a most interesting collection of Orchids, including some fine specimens. Mr. Smee tries all kinds of experiments with his Orchids, growing some of them out of doors in summer, and he finds some of them to succeed well under this regime. We have no doubt a great deal may be learnt by experiments in this and other directions, and as so many plants can now be purchased at the cost of a few shillings each, they might be extensively tried at a very moderate outlay.

Lælia superbiens is a fine evergreen plant, one of the noblest species of this section. It is a large growing epiphyte with fusiform stems bearing a pair of oblong-acute rigid leathery leaves at the top of each stem, the flower stalk or scape issuing from between them. This scape varies from three to nine feet in height, bearing at the end a raceme or cluster of from fourteen to twenty blossoms, often measuring seven inches across each of the flowers. The sepals and petals are of a beautiful rose colour, somewhat paler towards the base; the lip has the side lobes veined with deep crimson, and the front lobe of a deep rich crimson veined with a deeper crimson, while on the disk, extending half way up the lip, is a crest of five elevated subserrated orange-yellow lamellæ which are truncate in front. This plant commences to show its spikes after the growth is completed, and lasts in bloom for some time if the flowers are kept dry.

We have found this *Lælia* cultivated in several ways, either in a basket or in a pot; it will thrive in either, provided it has good drainage with rough fibrous peat and is elevated above the rim, so that the roots can go either in or outside as they please. It is a strong growing plant, and generally roots freely. It must not have much water at the roots; during the summer a little syringing on the old back bulbs will be beneficial to keep them in a vigorous state. After it has completed its growth the plant should be kept rather dry, just sufficient moisture being given to keep the stems plump until they begin to show flower spikes, after which a little more water may be given about the roots to encourage the flowers to come up strong and expand their blossoms freely.

This *Lælia* will also thrive well on good sized blocks of wood, plunged in a pot, but grown in this way they require more attention as regards water. They require but little shade, but all the light possible, in order to secure the perfect ripening of the stems, which will cause them to flower more freely.

ODONTOGLOSSUM ASPERSUM.

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ODONTOGLOSSUM ASPERSUM.

[Plate 245.]

Native of Mexico (supposed to be a natural hybrid).

Epiphytal. *Pseudobulbs* oblong or roundish-ovate, compressed, becoming rugose in age, monophyllous. *Leaves* ligulate-oblong acute, channelled, four to five inches long. *Scape* radical, issuing from the axil of an accessory leaf, about six inches high, erect, bearing one or two lanceolate scales, and a short corymbiform raceme of five or six erect flowers, each having a lanceolate acute bract at its base. *Flowers* of moderate size, about three inches across; *sepals* lanceolate acuminate, keeled behind, entire, nearly two inches long, spreading, creamy white, covered by oblong irregular mostly transverse bright brown blotches, which are divided by narrow lines of the ground colour; *petals* oblong acuminate, slightly wavy, upwards of half an inch broad, creamy white with a few brown blotches at the base only; *lip* cordate acute, the margins erose, with a yellow quadrate callus marked by thin brown lines and having an emarginate bidentate appendage in front. *Column* half an inch long, green at the base, purplish rose above.

Odontoglossum aspersum, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xi., 266; *Id.*, xvi., 780; *Williams, Orchid-Grower's Manual*, 6 ed., 424, with figure.

The *Odontoglossum* we now illustrate is a very pretty and distinct Orchid. It is supposed to be a natural hybrid between *Odontoglossum maculatum* and *O. Rossii*, and though it is most like *O. maculatum*, it certainly does resemble both species in some of its features. We have had masses of *O. Rossii* with which *O. aspersum* was intermixed, and both of them blooming at the same time, but the present plant is rarely met with, and is still a scarce plant. It is so much like *O. Rossii* in its manner of growth that it cannot be distinguished from that species except when in bloom. It is very free in producing its flowers, which are distinct from those of any other kind. Our drawing was taken from a nicely grown plant in the collection of W. Lee, Esq., Downside, Leatherhead.

Odontoglossum aspersum is a compact tufted plant, of small growth, attaining, like *O. Rossii*, the height of six to eight inches, and is furnished with lively evergreen foliage. The sepals and petals are yellowish white, mottled on the inner surface with numerous brown blotches; the petals are much broader than the keeled sepals, and have a few brown spots at their base only; the lip is creamy white with yellow crests. This plant produces its flowers during the winter months, and lasts in beauty for several weeks. It is one of the Mexican species, a most useful plant, and if grown with the varieties of *O. Rossii* produces a good contrast with their spotted white flowers.

Mr. Woolford, gardener at Downside, grows this species with the *O. Rossii* section in the cool Odontoglot house. We find that it does well in small baskets or pans suspended near the glass, which induces the plants to grow and bloom freely. The material we find to suit it best is peat and sphagnum moss, similar to that used for *O. Rossii* and other small growing congeners. They will thrive on blocks, but grown in this way they require more attention as regards moisture. It is, however, a more natural mode of cultivation, as, in their native country, they are found growing on the stems and branches of trees. *O. Rossii* is found in large masses and in great abundance, and in some parts the *O. aspersum* is found with it, but very sparingly, or we should receive more of it. A good many natural hybrids are met with, but still few in comparison to the number of plants imported. Hybrids, even in this country, are not very numerous, as many of the seeds sown prove to be imperfect. Some of these plants are easily increased, as they admit of being divided, and thrive well after the operation.

. **Orchid Habitats.**—Many of these beautiful plants grow in countries where few white men dare to venture. From these places the natives procure them for our collectors at a trifling cost; the great expense incurred in getting them home is attributable to travelling. There are places to which our collectors can go and procure them for themselves, and these are the places from whence we get our large supplies, and whence they are sent home by thousands, and so can often be bought at a cheap rate. Some of our friends seem to think we shall exhaust the supply of Orchids in their native countries. There is no doubt we have thinned them in some parts, but the immense tracts of country whereon no collector has set foot, will still yield a supply. They luxuriate where our Creator has placed them, and they increase and multiply without the assistance of man in their own native habitats. Their wants are provided for in the climate and circumstances that surround them. Nature supplies all their requirements, namely, the warmth, the rains, and the dews. If these wants were not provided for, the plants would cease to exist, but these being supplied naturally we shall always have Orchids flourishing and increasing, for they drop their seeds when ripe, and these fall in places where they get nourishment, according to the various seasons. The numbers that are brought home at the present time are extraordinary—truly enough for the million—but we have only been able to procure them in such quantities within the last ten or fifteen years. —B. S. W.

Magnus ad vivum del. et lith.

CATTLEYA MOSSIÆ

B.S.Williams Publ.

CATTLEYA MOSSIÆ.

[Plate 246.]

Native of La Guayra.

Epiphytal. *Stems* oblong fusiform, sulcate, a foot or more in height, clothed with sheathing scales, monophyllus. *Leaves* oblong obtuse, keeled beneath, six to eight inches long. *Scape* terminal, three to five flowered, issuing from an oblong acute flattened spathe. *Flowers* very large, five to six inches or more in diameter, richly coloured; *sepals* lanceolate entire, spreading, recurved towards the apex, pale or dilute rosy purple; *petals* elliptic ovate, shortly clawed, the margins entire at the base, irregularly crispate towards the apex, of the same colour as the sepals; *lip* broadly obovate, rolled in or incurved at the base where it folds over and encloses the column, the exterior surface of this part being of the same colour as the sepals and petals, the front expanded portion broadly obovate obtuse emarginate, crenulate and crispate at the margin, the ground colour like that of the petals, the base near the infolded part or throat stained heavily with deep rich orange colour, in front of which it is heavily blotched mottled and veined with deep magenta purple, some of which colour is also seen within the throat. *Column* clavate, semiterete, included.

Cattleya Mossiæ, *Hooker, Botanical Magazine*, t. 3669; *Gardeners' Chronicle*, n.s., xx., 530, fig. 89; *Williams, Orchid-Grower's Manual*, 6 ed., 191.

Cattleya labiata Mossiæ, *Lindley, Botanical Register*, 1840, t. 58.

Epidendrum labiatum Mossiæ, *Reichenbach fil., Xenia Orchidacea*, ii., 30; *Id.*, in *Walpers' Annales Botanices Systematicæ*, vi., 314.

Our present portrait represents a plant which is at once the most popular and one of the oldest and best known of the Cattleyas in cultivation. *Cattleya Mossiæ* was named after one of our earliest Orchid growers, the late Mrs. Moss, of Otterspool, Aigburth, near Liverpool, the mother of Sir Thomas Moss, who resides at the same place, and is a subscriber to this work—a proof, were proof required, that he inherits his predecessor's love for Orchids.

We had some very grand varieties of this species forty or fifty years ago, and they were exhibited in very fine condition at our London shows, that is to say, with some fifty blossoms on the individual plant. Since that time the importations have been enormous, and the extent of variation that has thus been secured is extraordinary, the variation in colour alone being wonderful, extending from pure white to beautiful and brilliant shades of magenta and mauve. This gorgeous colouring, and this almost endless variety has done much to elevate these grand flowers in the estimation of the million, as we stated many years ago would be the case.

Even of this *Cattleya Mossiæ* alone collections can be seen with from 500 to 1,000 flowers perfect at one time during the months of May and June, those of almost every plant differing in colour, or shape, or size, from those of its neighbour, the picture, indeed, being a gorgeous one.

This *Cattleya Mossiæ*, as well as some of its equally beautiful allies, can be grown in an ordinary stove suspended from the roof, or set on the tables mixed with other plants. Many of the plants already mentioned were grown in this way, as, in those early days, there was not so much separate accommodation for them in our gardens as there is now, yet they were equally well grown. The plants can be bought at a very cheap rate in these days, there having been so many importations. We may assuredly add that the present species is one of the most free-growing and free-flowering Cattleyas we have in cultivation.

We here figure the form which we consider to be the true *C. Mossiæ*, and we hope in due time to add portraits of some of its grand varieties. We think this arrangement will be more satisfactory to the admirers of the plants, than to figure the best of the varieties first, leaving the typical form to be figured afterwards. There are very many magnificent varieties now in cultivation, most of which are noted in the *Orchid-Grower's Manual* (6th edition), and of these we hope to figure the best in this work as they come into flower.

Cattleya Mossiæ forms an evergreen tuft of club-shaped stems with dark green leaves, one being borne at the top of each stem, and from the base of these leaves the spathe appears, and eventually brings forth the noble blossoms, three or five together, of large size, varying from six to seven inches across. In some of the varieties the sepals and petals are pale rose coloured, and the lip also pale rose, veined and splashed with bright magenta, the throat being orange.

This species requires to be cultivated in the Cattleya house, and must have all the light possible. It should be planted in the same material which we have recommended for the *C. Trianæ*, *C. Mendelii*, and others of this class. The most important points are to give the plants a good season of growth after their flowering is over, and when their growth is completed to give them rest until they begin to show their flower buds in the sheath; then they require a little help with moisture at their roots. Do not allow them to get too dry during the resting period; the bulbs and leaves must be always kept plump and in vigorous health.

Insects are, of course, to be rigorously searched for, and battled with without mercy. The white scale will sometimes make its appearance, and should at once be carefully sponged off with tepid water. The thrips will also attack the foliage, if not carefully looked after and destroyed.

CŒLOGYNE DAYANA

B S Williams Publ.

CŒLOGYNE DAYANA.

[Plate 247.]

Native of Borneo.

Epiphytal. *Pseudobulbs* narrow cylindrical-fusiform, tufted, furrowed, four to five inches long, and invested at the base with long lanceolate acuminate light reddish brown scales. *Leaves* solitary, oblong acuminate, spreading, stalked. *Scape* terminal, lax, pendulous, developed with the young growth, bearing a distichous raceme of curiously coloured flowers, with a rhomboid deciduous brown bract as long as the ovary at the base of each. *Flowers* moderate-sized, the racemes containing about two dozen, which are rather distant from each other; *sepals* ligulate acute, spreading, channelled, of a very light ochre colour—almost white; *petals* linear acute, rather over an inch long, coloured like the sepals; *lip* three-lobed, cuneate oblong, the lateral lobes blunt, recurved, and blotched exteriorly near the tip with dark brown, the blotch on the inner recurved face being striped with white streaks, the front lobe shortly oblong-obovate apiculate, very pale ochre colour, bordered at the tip by a crescent-shaped belt of dark brown, with the extreme edge white, and having two keels extending from the base of the lip to the base of the middle lobe, where they become divided into six denticulate undulated keels. *Column* slender, with an emarginate border to the anther bed.

Cœlogyne Dayana, *Reichenbach fil.*, in *Gardeners' Chronicle*, N.S., xxi., 826; *Id.*, xxvi., 44, fig. 9; *Williams, Orchid-Grower's Manual*, 6 ed., 219.

The Cœlogynes constitute a large genus, to which the species now before us forms a most charming addition. It was first flowered by J. Day, Esq., of Tottenham, in whose honour it is named, the compliment being well deserved, for no one has done more for the development of Orchid culture than has Mr. Day; and, moreover, he not only cultivates them but paints them true to nature. What a delight it must be to an Orchid student to have a collection of faithful sketches, made by his own hand, and which can be referred to at any time when required.

Our drawing was taken from a well-bloomed plant in the noble collection of Baron Schröder, The Dell, Staines. It grows in the way of *C. Massangeana*, which we have figured at Plate 29 of our first volume, and produces its flower spikes in the same way, but is distinct from that species both as regards its flowers and its growth. The two species are good companions for each other. Mr. Ballantine, at The Dell, grows *C. Dayana* suspended from the roof of the house and as the flower spikes are of a drooping habit, it presents a better appearance while in bloom when disposed in this way.

Cœlogyne Dayana is a plant of evergreen habit, and is furnished with long narrow —almost cylindrical—pseudobulbs which bear dark green foliage. It produces its long pendulous inflorescence from the base of the pseudobulb, and bears about twenty-four flowers on each of its somewhat loose racemes. The sepals and petals are of a very light ochre yellow, the lateral lobes of the lip being marked with numerous collateral longitudinal broad dark-coloured and white stripes, and the front lobe on the same light-coloured ground, bearing a crescent-shaped half ring of dark brown. This Bornean species blooms during summer and flowers in succession, all down the spike.

This species will thrive with the same treatment as *C. Massangeana*, that is, it may be grown either in a pot or in a basket suspended from the roof of the Orchid-house, using as a compost rough fibrous peat and sphagnum moss, and being careful to secure good drainage. A liberal supply of water must be given during the period of vigorous growth, and a smaller quantity during the season of rest. The plants are free in blooming if they are well cultivated and receive proper attention, which is simply to have plenty of light, and to be furnished with good sweet material to grow in. They will do either in the East India house or in the warmest part of the Cattleya house, with a slight shading during the time the sun is powerful. The foliage frequently gets spoiled through having too much sun; a little of the early morning sun will not harm it, neither will it suffer after four o'clock in the afternoon when the heat is on the decline; but the hot midday sun is more than it can bear.

J. Nugent Fitch. del et lith.

VANDA DENISONIANA HEBRAICA.

B.S. Williams Publ.

VANDA DENISONIANA HEBRAICA.

[Plate 248.]

Native of Burmah.

Epiphytal. *Stems* erect, free-growing, furnished with rigid dark green leaves broader and longer than those of *Vanda Bensoni*, which it much resembles in its mode of growth. ***Leaves*** distichous, lorate, channelled, recurved, deeply and obliquely two-lobed at the apex, the lobes sharply pointed. *Peduncle* axillary, stout, ascending, pale green, terminating in a raceme of several prettily marked blossoms. *Flowers* medium-sized, with the segments spreading, thick and fleshy in texture; *sepals* oblong-spathulate obtuse, wavy, emarginate, tapered into a broad claw; *petals* spathulate, somewhat wavy, with the claw narrower than in the sepals—both sepals and petals of a pale ochre yellow, paler and unspotted behind, marked on the inner surface with numerous short transverse lines between the faint longitudinal veins, giving it a somewhat tessellated character; *lip* pandurate, the apex two-lobed, the lobes divaricate like the tip of a blackcock's tail, pale sulphur-yellow, still paler in the roundish broad lateral lobes, in the centre between which is an orange-yellow crest, the ovary and pedicels pale straw yellow; *spur* orange inside according to Reichenbach, who says the anterior part of the blade of the lip is olive-green.

Vanda Denisoniana hebraica, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xxiv., 39; *Williams, Orchid-Grower's Manual*, 6 ed., 601.

The Vandas, without doubt, rank among the most useful as well as the most noble and beautiful of Orchids. They, indeed, always present a feature of beauty whether in flower or not, as their foliage is so displayed as to give them a bold and striking appearance. Some of these plants, moreover, may be found in bloom all the year round, especially such as *Vanda tricolor* and its varieties, of which there are many, varying very much in colour, as there are also of *V. suavis*. These are all free-flowering plants, and when strong and vigorous they produce flower spikes two or three times in a year, and often last six weeks in beauty at one time, so that there are comparatively but short periods when they are not in bloom. They have a delicious fragrance, sufficiently powerful to scent the whole house in which they are kept.

Several new Vandas, such as *V. Sanderiana*, have made their appearance during the past few years; and now we have the one we are here figuring, which is very distinct in colour from any we have seen, and is deliciously fragrant. We last year bloomed the plant from which our drawing was taken, and since then it has passed into the collection of the Duc de Massa, in France. The Duke was pleased to be able to procure this rare plant, as he is forming a grand collection of

Vandas, and has some fine specimens of all the best species and varieties in cultivation.

Vanda Denisoniana hebraica, which forms an evergreen tuft, is quite new, having been introduced by us a few years ago, and flowered for the first time last year. It resembles its parent, *V. Denisoniana*, in its growth, and attains the height of three feet, with perfect foliage, and when well grown is an unique plant. The spikes of its fragrant flowers are produced on each side of the stem from the axils of its copious leaves; the sepals and petals are sulphur-coloured on both sides, but darker within, where they are covered with numerous streaks and short transverse bars forming marks somewhat resembling Hebrew characters; the spur is orange-coloured inside, and the front part of the blade of the lip pale sulphur-yellow. The blossoms are produced during the summer months, and continue in perfection for some time. We received it from Burmah.

We have grown this distinct variety in the East India Orchid house with other Vandas, and find it succeeds well grown in pots with live sphagnum moss and good drainage, filling the pots three-parts full of broken pots, and placing the moss on the top above which the plant is elevated about three inches. A few broken crocks mixed with the moss will be beneficial to the roots, as they help to keep the material open so that the superabundant water can pass away, for stagnant moisture is detrimental to these plants. They require, indeed, to be kept moist at the roots during the time of vigorous growth, which comes after the flowering season, but they are growing more or less during the whole year, even during winter, and at this time the moss should be kept rather moist, which prevents them from losing their bottom leaves—a misfortune which frequently occurs if the plants are kept dry, as they have no thick fleshy bulbs from which to draw support.

These Vandas are of easy cultivation if they get the treatment they require. We find no difficulty about this, as we always treat them alike, and grow them in the same house. They require shading from the hottest sun, but this should be done with very thin shading, as the plants like all the light possible. For this reason the blinds should never be kept down when the sun is on the decline, or during dull weather.

These plants are propagated by the young growths which spring from the base and sides of the stems; these should be left on until they make roots, and then be taken off with care and potted in the same kind of material as recommended above for the parent plants.

J.Nugent Fitch del et lith.

CATTLEYA TRIANÆ DODGSONI.

B.S.Williams Publ.

CATTLEYA TRIANÆ DODGSONI.

[Plate 249.]

Native of New Grenada.

Epiphytal. *Stems* stout, oblong clavate, furrowed, the older parts enveloped in whitish membranaceous sheaths. *Leaves* solitary, leathery, broadly ligulate-oblong, bluntish, channelled, deep green. *Scape* stout, four or five-flowered, issuing from a terminal oblong compressed pale yellowish green sheath. *Flowers* very large, eight to nine inches across, and well expanded, the lip very richly coloured; *sepals* lanceolate acute, entire, spreading, recurved at the tip, white; *petals* broadly ovate obtuse, entire at the base, frilled along the anterior margin, white, widely spread; *lip* prominent, the basal portion blush, folded up over the column which is concealed by it, the throat open, showing a pale ground colour and a veiny orange blotch which spreads out on each side into a divergent rounded lobe, the form of the marking resembling that of a blackcock's tail, the anterior half of the front expanded portion emarginate, of a rich magenta or violet-crimson, which terminates abruptly in a curved line in front of the orange throat, the margins undulated, continued upwards so as to surround the opening of the throat, and coloured of a paler purplish lilac hue except at the extreme apex. *Column* enclosed, clavate.

Cattleya Trianæ Dodgsoni, *Williams, Orchid-Grower's Manual*, 5 ed., 133; 6 ed., 202; *Floral Magazine*, 2 ser., t. 64.

We have described and figured several beautiful varieties of the *Cattleya Trianæ* that have been not only brilliant in colour but also grand in form, and remarkable for the substance of their blossoms—these characteristics being those which we consider to be essential qualities of a first-class variety. We now offer an illustration of one of the most chaste and beautiful of the white-flowered series of forms, in *Cattleya Trianæ Dodgsoni*, a variety which we had the pleasure to name some years ago in honour of the late R. B. Dodgson, Esq., of Beardwood, Blackburn, in whose collection the plant was first bloomed, and in which it continued to bloom every year until it grew into a large specimen capable of producing several flower spikes. Our drawing was taken from this plant, whose noble spikes bore five flowers each. We regret being compelled to curtail the number of flowers in our plate, as the limited number does not give the same effect as was produced on the plant itself. This specimen, which was sold at Stevens' rooms, Covent Garden, and realised one hundred and eighty-five guineas, was purchased by W. Lee, Esq., of Leatherhead. There have been several large specimens sold for the same variety by other persons, but we consider they are not the true one. On the same day, with the above, there was another wonderful specimen sold, namely, *Cattleya Trianæ Osmanni*, which realised two hundred and fifteen guineas, and was

purchased by ourselves. This is the best of all the dark-coloured forms of *C. Trianæ*, both as to form and substance, that we have seen. There were several other fine varieties sold at the same time; we believe they were all imported some fifteen years ago or more by the Messrs. Low & Co., of Clapton, on which occasion we had the pleasure of naming all the best.

Cattleya Trianæ Dodgsoni is an evergreen plant, with fine dark green foliage, and produces strong spikes of blossoms, five on one spike, each flower being from eight to nine inches across, and expanding its flowers so that it forms a noble object. The sepals and petals are pure white, the lip deep violet-crimson slightly margined with pale pink, the throat orange-yellow. It blooms during the winter and spring months, and continues in beauty for some time if the flowers are kept free from damp.

This Cattleya requires the same treatment as *C. Trianæ*. Mr. Osman, the late Mr. Dodgson's gardener, grew this section of Cattleyas admirably. There were many other fine varieties of this species grown in a quarter-span house, which had a brick pit in the middle and a stage placed over the pit near the light; each plant stood separate, so that there was plenty of light between them, which was a great help to them, giving strength to the stems, which were always well ripened, so that every plant brought its strong spikes of flower to perfection, the whole producing a grand effect during winter and spring. Here the plants grew year after year, and continued improving; they were the delight both of Mr. Dodgson and his gardener, Mr. Osman taking great pride in the specimens, as they made such a magnificent show in winter.

There were other Cattleyas grown in the same house, and these thrived equally well. The material used for the roots was good fibrous peat and sphagnum moss, the whole being well drained. A good season of growth was secured, and they were rested at the proper time after their growth was completed, keeping the soil just moist enough for the stems to remain plump. When the flower buds began to form, more moisture was given in order to invigorate them, and help them to form good flowers. We also noticed that the plants, during the season of activity, did not have much water; we believe there is no better course of treatment than this, as too liberal a supply of water at any time is detrimental to Cattleyas. Of course they get a good deal of rain in their native country, but that soon passes away, as they have so little material about their roots; they also get the full influence of the winds, which counteracts the effects of moisture. This, of course, cannot well be imitated in our glass houses, where the plants in their confinement obtain comparatively little air; but to ensure success all these points must be thought of and studied, and carried out as far as may be practicable.

SOBRALIA XANTHOLEUCA

SOBRALIA XANTHOLEUCA.

[Plate 250.]

Native of Central America.

Terrestrial. *Stems* reed-like, as thick as a goose quill, three feet high, leafy, terminated by the inflorescence. *Leaves* persistent, broadly lanceolate acuminate, strongly plicate, of a deep green colour, the base clasping and sheathing the stem, the sheathing portion dotted with brown. *Flowers* large and handsome, deflexed, produced in a short terminal raceme, the sheathing imbricated bracts of which are spotted with brown, each blossom nearly six inches in diameter; *sepals* oblong-ovate, bluntish, spreading, very pale sulphur-yellow, about two and a half inches long and an inch and a half broad; *petals* ovate obtuse, larger and broader than the sepals, spreading, somewhat wavy, of the same pale sulphur colour; *lip* with a tubulose or enfolded base an inch and a half long, then spreading into a broad roundish crumpled limb two and a half inches across, of a brighter and deeper yellow than the rest of the flower, and having an orange-yellow blotch in the throat, which is marked with several parallel orange-red stripes. *Column* included, about as long as the tubulose portion.

Sobralia xantholeuca, *Hort.; Williams, Orchid-Grower's Manual*, 6 ed., 576; *Garden*, xxii., 508, t. 366.

We are pleased to be able to figure such a magnificent Sobralia as that represented in our plate. It is certainly a most beautiful and thoroughly distinct plant. The flowers differ in most respects from those of other Orchids, and in the present case are of a fine yellow colour, contrasting well with the rich purple-crimson of *S. macrantha* and *S. Ruckeri*. The white form of *S. Liliastrum* gives us, with the foregoing, three most distinct and showy colours. There are, besides, others of a rosy hue, and these make charming additions to the series. The large showy flowers, upon an erect stem, have a most distinct appearance; each flower, indeed, lasts but a few days, but they continue producing fresh flowers from the stem for several weeks. Our drawing was taken from a well-grown plant in the collection of the Rev. W. N. Ripley, Earlham Hall, Norwich. It is a very rare species, there being but few plants in cultivation, and these in the collections of Baron Schröder and of the Comte de Germiny. The late R. Hanbury, of The Poles, Ware, also possessed this rare plant, and was the first to flower it. There may be others in existence, but we have not seen or heard of them.

Sobralia xantholeuca is an evergreen species with reed-like stems, growing about three feet in height, and producing its handsome flowers from the top of the second year's growth, out of a terminal sheath, which is spotted with brown; they

are produced in succession, for as soon as one flower goes off another appears, until the buds in the sheath are exhausted. Each of its large bright reflexed flowers lasts some three or four days. They have oblong lanceolate sepals, broader petals, which are wavy at the edge, both being of a pale or sulphur-yellow, and the longer emarginate lip is very much frilled, and of a deeper yellow colour. It blooms during the summer months, and is one of the most beautiful plants that have been introduced to our plant stoves.

All the Sobralias are free-growing terrestrial Orchids, and of easy culture if they get the treatment required. They come from Mexico and Guatemala, so that they do not really require a strong heat; and although we have formerly grown them in the East India house, we have of late found them do better under cooler treatment, as they grow more robust, and keep more free from insects. When grown in too warm a house these pests often infest their foliage, which causes it to turn black, and is very injurious to the health of the plants. We have not grown the species represented in our plate, but it no doubt comes from the same country, and requires the same treatment as *S. macrantha* does. They require good-sized pots to grow them in, as they are free-rooting plants, requiring to be shifted as they increase in size and fill the pots with growth and roots. We find them thrive in a compost of rough fibrous peat, and equally well in rough fibrous loam and leaf-mould, with good drainage, which is essential, as they require a copious supply of water during their active growth, which occurs after their flowering season is past; in fact they are growing nearly all the year. They require a slight shade during the hot days of summer.

These plants are propagated by dividing the plants when they are of sufficient size; they should have a young growth and some old stems at the back of it. This operation should be performed just as they are beginning to grow after they have flowered; pot the divided portions in the same material as that in which they have been grown, in pots just large enough for them, keeping them shaded until they begin to make fresh roots, then give them less shade, which will induce them to grow strong. As they increase in growth give them larger pots, as they may be thought to require it.

J.Nugent. Fitch del. et lith.

ODONTOGLOSSUM CERVANTESII DECORUM

B.S.W.L.

ODONTOGLOSSUM CERVANTESII DECORUM.

[Plate 251.]

Native of Mexico.

Epiphytal. *Pseudobulbs* ovate, angular, tufted, invested at the base with brown ovate scales. *Leaves* solitary, persistent, oblong-ligulate acute, channelled, narrowed below into a short stalk-like base. *Scapes* springing from the base of the pseudobulbs, furnished below with subappressed whitish-brown linear-lanceolate scales, and terminating in a raceme of two-ranked flowers four to six in number, each subtended by a more or less spreading bract of the same form and colour as those found below the blossoms. *Flowers* two and a half inches across, beautifully marked with concentric bars of crimson, the back of the flower also decorated in a similar way; *sepals* ovate acuminate, spreading, white, the base marked with numerous lines of crimson concentrically arranged; *petals* roundish ovate obtuse, spreading, pure white with a dark green patch at the base, and broken concentric crimson lines like those of the sepals beyond; *lip* broadly cordiform, conspicuously undulated at the edges, white with fewer and heavier concentric bands of crimson and some distinct bars of crimson scattered in other directions, the most prominent running from the centre towards the circumference. *Column* white, yellowish at the base, with obtuse spreading wings faintly spotted with rose colour.

Odontoglossum Cervantesii decorum, *Reichenbach fil. MS.*; *Gardeners' Chronicle*, n.s., vii., 219; ix., 43; *Williams, Orchid-Grower's Manual*, 6 ed., 427.

This is one of the choicest of small-growing Odontoglots. The species itself is a very beautiful one, and a gem in its way, but the one we here figure is still finer, being a splendidly spotted variety and larger in its flowers. It is very rare, which is to be regretted, as so lovely a plant ought to be in every collection. The original form of *Odontoglossum Cervantesii*, which will be found in our fourth volume at Plate 161, is a charming free-blooming species, and on account of its graceful spikes, each producing several flowers, it should be extensively grown, as it takes up a very small space when suspended so that it can be seen to advantage. *O. Rossii* and its varieties are good company for it, flowering at the same time, but none of them are equal to our present subject.

Our figure of *Odontoglossum Cervantesii decorum* was taken from a finely-bloomed specimen in the well-known collection of W. Lee, Esq., Downside, Leatherhead, where we have had the pleasure of sketching many rare plants. The one now before us is a dwarf compact evergreen epiphyte, and, like the species, produces short angular bulbs and ligulate leaves; it, moreover, bears very beautiful flowers, as will be seen by our illustration. The flowers are large, nearly three inches across, and are borne several on a spike; the sepals and petals are white tinged

with rose, and spotted and barred concentrically with reddish brown; the lip is large, white tinged with rose, blotched with crimson, and beautifully fringed. This variety was exhibited by Sir Trevor Lawrence, Bart., M.P., at the meeting of the Royal Horticultural Society, February, 1877, when it was much admired and certificated. It blooms during the winter months, and continues in beauty for several weeks.

This lovely Orchid, with the allied forms, are best grown in the cool Odontoglossum house suspended from the roof, so that they may obtain all the light possible. They are small-growing plants, and will thrive either in baskets or small pans with a little light material about their roots, such as good fibrous peat, with all the fine earthy parts shaken out; they will also succeed in good live sphagnum moss, but must have perfect drainage, so that no stagnant moisture can collect and remain about their roots. The material should be kept moist during their growing season, but when at rest less will be required, though at all times they must be kept moist, and shaded from the burning sun. This splendid variety is imported sparingly among the good-sized masses of *O. Cervantesii*, which are often received from its native country, where they are found on the stems and branches of trees.

DENDROBIUM WILLIAMSIANUM.

[Plate 252.]

Native of New Guinea.

Epiphytal. *Stems* rod-like terete, erect, about a foot and a half high, as thick as a goose quill, the internodes clothed with pale brown striated sheaths. *Leaves* persistent, oblong, blunt, and obliquely emarginate, channelled, two to two and a half inches long, shortly amplexicaul, of a palish green. *Scapes* terminal, slender, green above, purplish below, with a few acuminate approximate bracts, bearing at the apex a raceme of six or more blossoms, each pedicel having at its base an ovate acuminate membraneous bract. *Flowers* drooping, over two inches across, with a remarkable cucullate or scoop-shaped lip, and a short blunt conical basal spur; *sepals* ligulate oblong obtuse, fleshy, white, slightly mauve tinted, the lower ones longer and more acute, rather incurved, the bases of the lateral ones dilated, and with the base of the lip forming the blunt spur; *petals* cuneate obovate, bluntly acute, rather more deeply tinged than the sepals with pale mauve; *lip* with a claw and elbow, turned up against the adnate purple column, the front part with its sides folded up so as to form a scoop, and the apical portion recurved, the basal part narrowed to the elbow, the limb not closing over the column, outside of a pale purple-lilac, channelled below, the inside of an intense blackish purple, rather paler at the apex and margin; on the disk towards the front and terminating the ridge corresponding to the channel beneath, are three squarish erect lamellæ of a still deeper purple than the limb, the front part of which is obtusely ovate, the recurved part white with a few cross veins; spur or mentum small, conical, extending beyond the elbow of the lip.

Dendrobium Williamsianum, *Reichenbach fil.*, *Gardeners' Chronicle*, n.s., ix., 652; *Id.*, xxvi., 173, fig. 32; 199; *Orchid Album*, vi., note under t. 241.

The Dendrobes constitute a large genus of Orchids, to which of late there have been added many fine and distinct species. We here illustrate one which we introduced several years ago, but of which, having but a few plants, we were only fortunate enough to preserve one, which we have flowered for the first time during the present year. This plant was exhibited by us at the Royal Horticultural Society's meeting, and we were awarded a First Class Certificate for it on account of its distinctness and the beautiful colour of its flowers. Our drawing was taken from this plant, and is a good representation of it and its flowers. We obtained it from New Guinea, through our collector, who also sent dried flowers, which retained their colour, and were described by Professor Reichenbach in the *Gardeners' Chronicle* for 1878. There is no doubt it is a rare species, as we received only seven plants, and of those only one in a living state, and this had a narrow escape from being lost through an injury it sustained about three years ago, but

since then it has grown on and flowered. This plant was sold to The Hon. F. L. Ames, North Easton, Mass., U.S.A., who saw it in bloom after we had shown it. We have found that good Orchids never remain long on hand, but that purchasers always find them out.

Dendrobium Williamsianum is an evergreen species, distinct and handsome, with erect stems about eighteen inches high, sparingly leafy, and producing its inflorescence from the top of the matured stems. It has large flowers, which have pure white sepals and petals, and a scoop-shaped lip of a deep mauve-purple colour; its inflorescence shows off to great advantage through the contrast between these two distinct colours, and it lasts in bloom for several weeks. It is a native of New Guinea.

We have found this plant to succeed well in a warm house where it gets plenty of sun. In fact, we grow it in the Croton house with *Dendrobium superbiens* and *D. Goldiei;* they all thrive well in this house exposed to the full sun, a position in which they seem to delight; the two last-named quickly making nice plants from small pieces. We take off every break that appears from the old stems, and place each in a small pan with peat and sphagnum moss, watering them once a day when the weather is hot and dry. We have never found any difficulty about cultivating these Australian and New Guinea species. We do not think *D. Williamsianum* is so free in breaking as the others, but that has to be ascertained; the last growth it made was twelve inches higher than the stem it had previously made, and it began to show its inclination for a sunny position. In fact nearly all Dendrobes require a good deal of sun to ripen their bulbs, and induce them to flower freely.

LÆLIA AMPLIANA.

LÆLIA AMESIANA.

[Plate 253.]

Garden Hybrid.

Epiphytal. *Stems* clavate oblong, compressed, the internodes clothed with pallid membranaceous sheaths. *Leaves* oblong obtuse, solitary, leathery, of a deep green colour. *Scape* issuing from an elongate oblong pale yellowish green sheath, situated at the base of the leaf, and bearing three or four blossoms. *Flowers* moderately large, distinct in character, and handsomely coloured; *sepals* lanceolate acute, entire, spreading, with the apices recurved, almost white, the flush of purple being very faint and scarcely appreciable; *petals* ovate obtuse, frilled at the edge, of the same slightly flushed white as the sepals; *lip* with the basal portion enfolded over the column of a pale yellowish or cream-coloured hue, the throat, which has a very short orifice, flushed with purple down the centre, and having a clear yellow blotch on each side at the opening, the front lobe roundish ovate, neatly frilled, of a rich deep magenta-purple, somewhat paler towards the upper part where the edges meet over the throat, at which point it is almost white. *Column* included.

Lælia Amesiana, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xxi., 109.

Cattleya Amesiana, *Hort.*; *Williams, Orchid-Grower's Manual*, 6 ed., 173.

This splendid hybrid Lælia is one of the most beautiful that has yet been obtained. It was raised by the Messrs. Veitch & Sons, of Chelsea, and is a cross between *Cattleya (Lælia) crispa* and *C. maxima*, the admixture of which has proved a most successful experiment. We first saw this fine hybrid exhibited by the raisers in December, 1883, at one of the meetings of the Royal Horticultural Society, where it was much admired. It is named in honour of The Hon. F. L. Ames, of North Easton, Mass., U.S.A., who is a great admirer of good plants, and has many rare and beautiful specimens. We owe the opportunity of securing our drawing to the kindness of W. Lee, Esq., Downside, Leatherhead, in whose collection it has bloomed during the present year.

Lælia Amesiana is a splendid free-flowering evergreen plant, having flowers similar in form to those of *Cattleya exoniensis*. The blossoms are bold and striking in appearance, the sepals and petals are blush white, and the lip a rich magenta-crimson. It blooms at different times of the year, according as it makes its growth, and it lasts some time in beauty if the flowers are kept free from damp. As Cattleyas often go spotted if they are kept too cool, a warm house, with a little moisture, offers the best conditions for preserving their flowers, even in spring and summer.

This species requires the same treatment as other Cattleyas. Mr. Woolford, at Downside, grows this plant suspended from the roof of the large Cattleya house near the glass, a position in which many rare species are kept, and which they seem to like, for they are growing and flowering vigorously. This is a very light house, and that is the reason why it is so suitable to Cattleyas. Light is one of the chief requirements of these plants, and it should be given at all seasons of the year, the hottest sun being just kept off them, but the blinds never allowed to be down when there is a chance of their having light. Our seasons are short, and, therefore, every opportunity should be given them to ripen and strengthen their bulbs.

This plant requires the same material for its roots as is used for other Cattleyas, such as we have recommended in other parts of this work.

Orchid Selection.—Orchids are now so numerous, and so many of them are beauteous beyond description, that it is of no use going to the trouble and expense of exporting the bad or inferior species and forms, especially if it is intended to realise money by them. There are so many already in this country which are really fine, that even if they are not required for commercial purposes, when, of course, their money value is a consideration, it is far better to get over only the good forms. Everyone would naturally prefer to grow only the best varieties, since it takes no more room to cultivate a good kind than it does a bad one.—B. S. W.

J. Nugent Fitch del.

B.S. Williams

ODONTOGLOSSUM LUTEO-PURPUREUM MAGNIFICUM.

ODONTOGLOSSUM LUTEO-PURPUREUM MAGNIFICUM.

[Plate 254.]

Native of New Grenada.

Epiphytal. *Pseudobulbs* stout, oval, compressed, furrowed, two to three inches long, with a pair of leaves from the top, and accessory leaves from the base. *Leaves* ensiform acute, two feet in length and an inch and a quarter broad, deep green, narrowed to the base where they are folded. *Scape* lateral, issuing from the axil of an accessory leaf, two to three feet long, spreading, terminating in a raceme of numerous expanded flowers which are large and remarkably showy. *Flowers* spreading, four inches across, and about the same in depth; *sepals* lanceolate, entire or slightly toothed or undulated at the edge, of a rich deep chestnut-brown, except about half an inch at the tip, which is yellow; *petals* similar in form but toothed as well as wavy at the edge, deep rich chestnut-brown for about two-thirds of their length, this colour broken up into unequal sections by about two transverse and two longitudinal bars of yellow; *lip* obovate cuspidate, fimbriate at the edge, contracted towards the base, with a long multifidly pectinate deepish yellow crest on the disk, marked on each side with a row of small transverse brown spots, the fore part of the lip palish, or sulphur-yellow, and the base bearing in front of the disk a transverse roundish oblong blotch of deep chestnut-brown. *Column* with a pair of broad pale yellow pectinate wings.

Odontoglossum luteo-purpureum magnificum, *Williams & Moore, supra.*

Odontoglossum hystrix magnificum, *of gardens.*

This variable species was first discovered by M. Linden, in the dense forests of Quindiu, at an elevation of 8,000 feet, whence it was sent by him to Europe. It was subsequently found by Mr. Weir, when travelling for the Royal Horticultural Society, about 100 miles south of Bogota; Messrs. Low & Co. also imported the plant through their collector, Mr. Blunt, and several varieties differing essentially one from the other, flowered out of this last importation and were named respectively *O. hystrix* by Mr. Bateman, and *O. radiatum* by Professor Reichenbach. Since then, however, connecting links have been flowered.

Most of the Odontoglossums are found in New Grenada, at an altitude of from 7,000 feet to 8,000 feet, so that they are difficult to obtain, and expensive to bring down to the seaports for shipment to our shores. The accompanying illustration was taken from a fine specimen in the select collection of R. H. Measures, Esq., Woodlands, Streatham. It was a very fine spike, and we much regret that we

are only able to illustrate a portion of it, but this will enable our readers to judge what a fine variety they have before them.

Odontoglossum luteo-purpureum magnificum is a free evergreen plant, furnished with dark green leaves. It produces long spikes, the flowers varying in number according to the strength of the pseudobulbs, each flower being from three to four inches across, the sepals and petals bright chestnut-brown, the latter barred and blotched with yellow, and both sepals and petals being tipped with yellow; the lip is pale yellow, chestnut-brown in the basal part, and the crest and throat are yellow, barred with chestnut colour. The plant blooms during spring and summer, and lasts for several weeks in beauty. The flowers are of a colour that is much wanted in order to contrast with *O. Alexandræ, O. Pescatorei* and others.

This plant requires the same treatment as *O. Alexandræ*, etc. It is strong growing in habit, and consequently bears good spikes, with fine flowers. The bulbs require to be well matured, hence it must have plenty of water during the growing season and be placed in well-drained pots of good fibrous peat. These Odontoglots require to be kept moist at the roots during the time they are showing their flower spikes, and also when in bloom, as they are of such free-flowering habit that they produce several spikes, and having so much strain upon them they require extra moisture to keep their bulbs plump. It is often a mistake with growers to allow these free-flowering varieties to get too dry, and they also keep their flower spikes on them too long. In order to invigorate the plant they should be cut off when they have been in bloom a reasonable time.

There is found to be great variation among this section of Odontoglossums, owing probably to the hybridising work that is constantly going on in their native country, chiefly, no doubt, through the insects, who carry the pollen of one species or variety so as to bring it into contact with the stigma of some different form or species, hence the great variations of colour and shape that are being produced and which come in due time to us in the different consignments made by our energetic collectors. These plants are often brought to the collectors by the natives who are sent out in search of novelties, but in procuring them it often happens that trees of large size have to be felled, and in these cases, most probably, the collectors take all they find without selection, in order to make up the larger number, since they are generally paid in this manner. After being gathered together they are packed in bags or sacks and placed on mules' backs, and thus the natives travel for some time in order to bring in a sufficient number to the various collectors for whom they are acting, and by whom they are finally sent to this country. The plants have thus a great deal to go through, and consequently many thousands are lost, and among them, it may be, some of the very best species and varieties. All these losses, of course, have to be borne by those who are at the expense of sending out collectors for them. Many of the natives are now gaining experience, and begin to know the best localities where the finest strains abound, and as they get a higher rate of remuneration for these, they search for them more diligently.

B.S Williams

CYPRIPEDIUM BELLICERUM.

CYPRIPEDIUM SELLIGERUM.

[Plate 255.]

Garden Hybrid.

Epiphytal. Acaulescent, of free bold habit, the plant forming a tuft of evergreen leaves which spring up from the crown of the roots. *Leaves* distichous, ligulate oblong, bluntish, thick, shining, keeled beneath, spreading, greyish green, faintly tesselated. *Scape* erect, branched, pubescent, of a purplish crimson, bearing about three blossoms, each having at the base a concave ovate bract. *Flowers* large, high-coloured, and showy; *sepals* (dorsal) roundish ovate, white, flushed with dull red, and marked with numerous longitudinal deep crimson-red bands or stripes, the apex incurved, the connate sepal smaller and paler in colour; *petals* linear ligulate, attenuated at the apex, distinctly ciliated about three inches long, spreading, deflexed with a partial twist, vinous crimson, veined with crimson-purple and having several blackish hairy warts, especially on the upper edge; *lip* oblong, bluntly pouch-shaped, spreading at the upper edge which is rounded behind, greenish and slightly veiny, the anterior portion of a deep crimson or vinous red. *Staminode* obcordate with an apiculus, pale reddish green, deflexed.

Cypripedium selligerum, *Veitch, Catalogue of New Plants,* 1878, 13, with figure; *Gardeners' Chronicle,* n.s., xix., 776, fig. 133; *Moore, Florist and Pomologist,* 1878, 85, with figure; *Williams, Orchid-grower's Manual,* 6 ed. 257, with figure.

Hybrid Cypripediums have become numerous, and many new forms are being from time to time flowered. We have figured some of them, but there are many more which yet remain to be done. They are great favourites, and deservedly so, with many orchidophilists. We now illustrate one which was raised several years since; it is a very distinct and free-blooming variety, and one which also is easy of cultivation. There are several forms of this hybrid, but the one we now figure we consider to be the original. This was raised between *C. philippinense (lævigatum)* and *C. barbatum* by the Messrs. Veitch & Sons, Chelsea, who sent it out some years ago. Our drawing was taken from a plant in the Victoria and Paradise Nurseries.

Cypripedium selligerum is a distinct hybrid plant of bold, massive habit, evergreen, with broad, thick, shining, faintly tessellated leaves, as in *C. philippinense*, and erect, blackish crimson pubescent flower scapes, which bear from two to three large flowers. The dorsal sepal is white, with broad blackish crimson veins; the strongly ciliated petals are about three inches long, deflexed with a partial twist, vinous red, veined with crimson-purple, and having several blackish marginal warts, especially on the upper side; while the lip or pouch is similar in shape to that of *C. barbatum*, but of a lighter red colour. This plant blooms at different times of

the year; indeed, we have had various plants flowering for the last six months, and each spike keeps in bloom for two months.

These plants are of easy culture, being very free in making their growth and flowering. They are best cultivated in pots with a good amount of drainage, at they require a plentiful supply of water at the roots during their active growth; in fact, even when at rest they should be kept rather moist at the roots, as they have no fleshy bulbs to support them. They must have thorough drainage, no stagnant water being allowed to hang about the roots, which should always have sound fresh material packed about them, consisting of good rough fibrous peat and live sphagnum moss, and they should also be elevated above the pot so that their roots can have room to work about the material; a few broken crocks will be beneficial to them by helping to keep the material open. We find the East India house to suit this *Cypripedium*, which flowers after the growth is completed, and when the blooming season is over they begin to put forth their fresh growth. This is a good time to pot them if they require it; if not, a little new material about them will be beneficial, removing the old soil and giving them fresh without injuring the roots. The plants should be kept free from insects. Sometimes the red thrips will attack them, also the white scale; these pests must be destroyed at once so that they may not injure the foliage.

Propagation is effected by dividing the plants between the growths so that sufficient crown and root are left to support them. They are free in making their young growths, and when these growths are completed they can be taken off if they have roots attached to them; the part retained will soon put forth a new growth. The offshoots should be potted in small pots, kept shaded from the sun, and will then soon establish themselves.

Hugent Hutch. del. et lith

B S Williams P

LÆLIA ANCEPS PERCIVALIANA.

LÆLIA ANCEPS PERCIVALIANA.

[Plate 256.]

Native of Mexico.

Epiphytal. *Pseudobulbs* oblong ovate, compressed, angulately ribbed, clustered, monophyllous. *Leaves* narrowish, lanceolate-oblong acuminate, stoutish, smooth, channelled at the base, six to nine inches long. *Scape* terminal, a foot long, two-edged, with long lanceolate carinate semi-sheathing light brown bracts, four-flowered. *Flowers* large, four and a half inches broad, and somewhat more in depth, the lip very richly coloured; *sepals* lanceolate acute, entire, spreading, of a delicate rosy blush; *petals* ovate acute, plane, spreading, of the same delicate rosy blush as the sepals; *lip* fully two inches long, three-lobed, the basal lobes erect, yellowish streaked with purple, their tips laterally recurved, deep purple at the edge, and spotted within; the throat marked on each side the central bar with several transverse lines of crimson, extending outwards as far as the above-mentioned spots, the front lobe an inch long, ovate, blunt emarginate, its lower half pale creamy yellow, with a deeper central bar, the upper or anterior half of a very rich purple. *Column* included.

Lælia anceps Percivaliana, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xix., 110; *Williams, Orchid-Grower's Manual*, 6 ed., 352.

There have been several new white-flowered varieties of *Lælia anceps* introduced within the last few years. We have figured some of the most distinct and prominent among them, namely, *L. anceps Dawsoni*, *L. anceps Hillii*, and *L. anceps Williamsiana*, and their portraits can be seen in our pages. We now figure another very distinct and charming variety, and one which is not only free-growing but also free-flowering, as will be seen from the accompanying illustration. We saw it a few weeks since growing most vigorously, and producing several flower spikes, in the collection of the Comte de Germiny, Chateau de Gouville, par Fontaine le Bourg, France, and from this plant our drawing was taken during the spring months of the present year; it is the finest specimen we have seen.

Lælia anceps Percivaliana is in growth like the type form, and attains about the same height, but its leaves are narrower and very pointed. The sepals and petals are of a blush-pink, as in the ordinary form, but the lip is truncate, not acute at the lateral angles, of the warmest mauve purple, its anterior portion of a bright purple-magenta; the disc is of a light orange, with the tips of the three crests sulphur-yellow, and having some strong purple lines over the nerves of the disc. It is a native of Mexico, blooms during the winter and spring months, and lasts in beauty about the same time as *L. anceps*.

This plant requires the same treatment as *L. anceps*, and will thrive either in a pot or in a basket with rough fibrous peat and live sphagnum moss. It should be grown as near the light as possible, with very little shade at any time, as, in their native country, they are found on trees where they receive all the light, with the exception of a slight shade that sometimes comes from the trees. They require a good deal of water during their season of growth, and, when they begin to show their spikes before the growth is completed they must be kept moist at the roots to encourage their flower spikes to become strong; after they have finished blooming less water will be needed, until they begin to send forth their new growth and make roots.

The plants must be kept free from insects, if a healthy and cleanly appearance is at all valued. The white scale will make its appearance if not looked after, and will spread if not speedily removed. The plants are propagated by dividing the tufts when in vigorous health. If it is not desired to increase their number, let them grow into large specimens, as we often see in the case of *Lælia anceps*, but then this has been in the country for many years.

Orchid Variability.—Orchids vary very much in their growth, even in their native habitats, according to the situation in which they are placed, and it is sometimes difficult to recognise the species when grown under different circumstances. Their pseudobulbs are shorter when they grow in dry places where they are exposed to the sun, for the heat dries them up, and, under these conditions, they get, as it were, condensed. They require more nourishment in order to induce them to make their bulbs longer, but when dry and exposed they make short stout bulbs. Still the species is the same and the flowers are the same as if the pseudobulbs were longer, but the foliage in these short-bulbed examples does not last so long as in the case of those found in moist shady places, and is not so green as on those that are found growing partially shaded.—B. S. W.

DENDROBIUM FALCONERI GIGANTEUM.

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DENDROBIUM FALCONERI GIGANTEUM.

[Plate 257.]

Native of Northern India.

Epiphytal. *Stems* elongate, slender, jointed, knotted in the older parts, stouter and more vigorous than in the typical form, the internodes clothed with a sheathing membrane. *Leaves* deciduous, confined to the young stems, the older ones becoming leafless, narrow-lanceolate acute, keeled behind, from two to two and a half inches long. *Flowers* solitary or in pairs from the joints of the older matured leafless stems, three inches across, brightly coloured and very showy, stouter in texture than those of the type, which they otherwise resemble; *sepals* oblong acute, white deeply tipped with bright magenta; *petals* ovate acute, tipped more heavily than the sepals with the same rich magenta; *lip* concave, one and a half inch long, ovate in outline, crispy towards the base, recurved, white heavily tipped with rich deep magenta-purple, and having towards the base a large blotch of bright orange three-fourths of an inch across, in the centre of which are two oblong contiguous blotches of rich maroon-crimson half an inch long, the inner margin of the blotches entire, the outer one feathered; the strong contrast of colours in the lip is very remarkable.

Dendrobium Falconeri giganteum, *of gardens; Williams, Orchid-Grower's Manual*, 6 ed., 282.

In *Dendrobium Falconeri* we have a most beautiful plant, of graceful pendulous habit, which, in its season, is decorated with charming and richly-coloured flowers. In its native habitats the dependent blossoms are produced freely on its slender knotted branching and abundantly-rooting stems, and these roots and blossoms with its small green leaves, give to it a somewhat quaint appearance. The plant was rare in collections a few years ago, but now we have large quantities brought home by our persevering collectors. The variety we here illustrate is a great improvement on the typical form of the species and has flowered among these importations. It will be seen from our figure that it is a stronger grower than the original form, and produces finer flowers. As yet it is very rare, and has only been seen in a few collections. We are indebted to Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, for the materials from which our illustration was prepared. In his well-known and superb collection it bloomed some time ago; but as we have already noted, it is still very rare. Sir Trevor Lawrence grows *D. Falconeri* in the Odontoglossum house, where it seems to do well.

Dendrobium Falconeri giganteum is a splendid epiphyte having stoutish stems which are swollen at the joints so as to have a knotty appearance; it is also larger than the older form in its foliage, which is linear-lanceolate in outline, and is

altogether a bolder plant than in the type. The flowers are large, measuring several inches across, and they are produced, as is usual in this species, from the joints of the knotty stems. The blossoms are white with a tinge of blush, tipped with rich deep rosy purple, and the lip has a broad orange-coloured disk, which is marked by two large dark maroon-purple spots. It flowers during the spring months, and lasts in bloom about ten days.

This variety of *Dendrobium* requires the same treatment as the species. There is no doubt that *D. Falconeri* is found difficult to grow in some collections; but we have known it cultivated with every success by many Orchid growers, and thriving well for years. Some of the finest specimens we have seen were grown for several years by Mr. Swan, when gardener to W. Leach, Esq., Fallowfield, Manchester, who exhibited them at the Manchester shows, with hundreds of blossoms on them. They were cultivated in pots or baskets, and trained with sticks so as to form a specimen—and a grand sight they presented with their brightly-coloured flowers. We have seen them grown equally well in other collections. They require attention at all times of the year, which is the case with many of the Dendrobiums, such as *D. Wardianum* and others. During their season of growth they should be attended with care, as also during the resting season; this is of great importance, as if they have too much drying up they do not like it. They should always be allowed to have a rest when their growth is completed, which period may be easily known by the last leaves at the top having completed their growth. The roots require to be kept moist up to that time; then, when the growth of the stems is completed, the quantity of water must be reduced, but they must never be kept too dry, so as to cause the stems to shrivel. When they begin to show the flower-buds a little water should be given to plump the stems and encourage the flower-buds to develop in a proper form; and as soon as they start their young growths let them go on so that they may ripen early, and be enabled to resist any strain that may be put upon them as regards flowers.

The two forms of *Dendrobium Falconeri* are best grown in rough peat and live sphagnum moss, but they must have good drainage as they require a liberal supply of water during the growing season; they should, therefore, be syringed twice a day in summer, during bright weather, but less frequently will do in the autumn. The plants should be suspended near the light, as they require but little shade; they will also thrive in baskets and on blocks of wood, but when grown on blocks they require more moisture and more frequent attention as to the water supply. The plants if well managed will repay all the trouble that is bestowed on them by producing their superb blossoms freely.

These plants should be kept free from insects. The red spider and thrips will attack their tender leaves, but good syringing and fumigation will keep them under, if attended to at the proper time.

J. Nugent Fitch. del

ODONTOGLOSSUM POLYXANTHUM GRANDIFLORUM

ODONTOGLOSSUM POLYXANTHUM GRANDIFLORUM.

[Plate 258.]

Native of Ecuador.

Epiphytal. *Pseudobulbs* ovate acuminate, ancipitous, bearing a pair of leaves from their apex, and several accessory ones from their base. *Leaves* ensiform, tapering to an acute point at the apex, narrowed to the base, slightly keeled behind, a foot long, the accessory ones somewhat sheathing the base of the pseudobulbs, deep green. *Scapes* lateral, drooping, many-flowered, two feet or more in length. *Flowers* showy, measuring about four inches across, yellow heavily spotted with bright chestnut-brown; *sepals* lanceolate acuminate, entire, spreading, somewhat recurved at the tip, deep ochre yellow, marked with a few large blotches of irregular form, and of a deep rich brown colour, the upper one, which is some distance from the apex, being the largest, and the others extending to the base; *petals* about the same size and form, of the same rich deep yellow with brown markings, but the blotches on these are smaller and confined to the basal third of the surface; *lip* stalked, the stalk appressed to the column fully half-way up, roundish oblong, concave, cordate at the base, toothed at the margin, cuspidate at the apex, almost wholly covered with a blotch of glossy chocolate-brown, with a very narrow border of white, and marked with a scolloped spot of light yellow towards the disk, which bears a prominent crest of two oblong dentate lobes running out to a point in front, and is yellow with a few red-brown striæ on the broader portion. *Column* clavate, with a yellow wing below the thickened pale brown apex.

Odontoglossum polyxanthum grandiflorum, *Williams MS.*

This splendid epiphyte was discovered in Ecuador at an elevation of 8,000 feet by Mr. Ed. Klaboch in 1878. It appears to be very rare in its native habitat, and is without question one of the finest species of the *Odontoglossum* family. Although the type itself is very beautiful, yet the inflorescence of this variety is more showy, the flowers being larger as well as richer and brighter in colour. When well cultivated the fine spikes of blossoms which are borne by *O. polyxanthum* continue in good condition for a length of time, and as its colours are such as to show up well, it is admired by all who see it; unfortunately, it is still a rare species in cultivation, only a few plants having been imported. There is a considerable difference to be met with in the flowers of the different varieties. That which we have before us, one of the finest which has appeared, is from the noble collection of W. Lee, Esq., Downside, Leatherhead, where we saw it flowering in great perfection last year, when our drawing was taken.

Odontoglossum polyxanthum grandiflorum is a compact growing plant with dark green foliage, and produces its fine flower-spikes from the base of the pseudobulb, each flower being of considerable size and of stout substance; the sepals and petals are large, ovate-lanceolate acute, deep yellow, the sepals having large roundish blotches of chestnut-brown, and the petals being more slightly marked near the base; the lip is brownish purple edged with creamy white. The plant blooms during the spring months, and continues in beauty for six or eight weeks.

The treatment which we find best to suit this plant is precisely the same as that given to *O. crispum* and *O. Pescatorei*, which we have often explained, and of which full particulars may be found in our pages. Mr. Woolford, of Downside, treats them in the same way. He grows them in a span-roofed house with all the light possible, and gives them plenty of moisture during the summer season, the supply being obtained from rain water tanks under the stages. This arrangement is one of the best that can be adopted, as rain water is better suited than any other to all plants, being natural to them in their wild condition. Consequently we find that the plants thrive better when soft water is used to supply their wants, the sphagnum moss also grows more freely; sometimes, indeed, hard water will kill the moss. There is a great difference in the quality of different waters, and hence rain water, which can be depended on for purity, is the safest to use for plant-culture. If this is not obtainable, water that has been exposed to the air for some time and has become aërated should take its place. This is a more important consideration than most people imagine. All such questions as this should be carefully studied, for oftentimes attention to small items tends greatly to secure success.

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LISSOCHILUS KIRKII PURPUREA.

LISSOCHILUS KREBSII PURPURATUS.

[Plate 259.]

Native of South Africa.

Terrestrial. *Pseudobulbs* ovato-conical, about three inches high, jointed, marked by the annulate scars of the investing bracts, and producing thick fibrous roots. *Leaves* several from each bulb, lanceolate acuminate, plicate, of herbaceous texture, a foot or rather more in length, and about two inches across, spreading, of a bright green colour. *Scape* radical, erect, upwards of three feet in height, and supporting an open raceme of about twenty blossoms, which are furnished with ovate acuminate appressed brown bracts at the base of their pedicels. *Flowers* showy, about two inches in diameter; *sepals* oblong, apiculate, revolute at the margin, spreading, green striped with purple on the outer side, of a more decided maroon-purple within; *petals* obovate, directed forwards, of a bright yellow on the outer surface, paler or creamy yellow on the inner side, and there marked with a few red veins at the base; *lip* three-lobed, the lateral lobes large, erect, roundish ovate, chocolate-purple streaked with darker lines within, the front lobe bent upwards at the base, bright yellow, convex or gibbous, each side being folded downwards, the short spur tipped with pink. *Column* short, creamy yellow.

Lissochilus Krebsii purpuratus, *N. E. Brown* in *Gardeners' Chronicle*, n.s., xxiv., 102 *(purpurata)*; *Williams, Orchid-Grower's Manual*, 6 ed., 636.

This is a very rare and beautiful variety of a South African species, with which we are not familiar in gardens. The specimen we here describe is the only blooming example that has come under our notice, and it is well worth a place in every collection, on account of its being so distinct from the generality of Orchids. There are about thirty known species of this genus, all found in Tropical or Southern Africa. We have included three in the new edition of the *Orchid-Grower's Manual*, namely, *L. Horsfallii*, *L. roseus*, and *L. speciosus*, which are described on pp. 374-5. These are all beautiful plants, but seldom seen, probably in consequence of their being deciduous, so that when at rest they get lost sight of, and are not attended to at the proper time; this is to be regretted, as they are well worth notice, being so entirely distinct in character. There are other showy species besides those named above that have not yet been introduced.

We strongly recommend that there should be a house set aside for the cultivation of the deciduous group of Orchids, of which there are other genera besides that now before us. They would, no doubt, obtain many admirers if they were well grown, as it frequently happens that we see growers of Orchidaceous plants quite amazed when they meet with examples of these lovely species in bloom.

Some cultivators take an especial interest in this peculiar class of Orchids, and we are sure that if those belonging to this terrestrial group were well grown and flowered, many others would follow their example.

Our drawing, here reproduced, was taken from a plant that flowered in 1885 at the gardens of the Royal Botanic Society, Regent's Park, through the kindness of Mr. E. A. Heath, to whom the specimen in question belonged, and by whom the species had been imported.

Lissochilus Krebsii purpuratus is like its congeners, a terrestrial plant of deciduous habit, having conical pseudobulbs three inches in length, furnished with stout roots and broad thin plicate leaves. The flower stem is three and a half feet in height, and bears a spike of about twenty flowers, of which some four or more open at one time; the sepals are dark green at the back, deep maroon-purple in front, the margins revolute; the petals are ovate, bright yellow outside and creamy yellow within, faintly veined with red at the base; the lip is clear yellow, having its lateral lobes of chocolate-purple streaked with darker lines, and the spur is tipped with pink. The plant flowers in July, and continues in beauty for some time.

These Terrestrial species of Orchids are best cultivated in pots, and must have good drainage. The material we find to suit them best is good fibrous loam, and the bulbs should be potted just below the rim so that they may receive a liberal supply of water during their growing season. When the growth is completed they should be kept nearly dry until they begin to start their flower-spikes, and their young growth appears; then a little water will help them, and when they attain a few inches in height a good supply may be given. As they come from a tropical clime they require a good heat, and, therefore, during their dormant season they should be kept in a warm house and not shaded, as they like to feel the warmth of the sun on their bulbs. The plants are best grown in the full light, though a little shading during their growth will benefit the foliage. After the stems and foliage die down great care must be taken of the bulbs, which must be set away in a moderately dry place until they commence to show signs of growth, when they may again have a gradually increasing supply of water, and all the light possible, in order to acquire strength.

ONCIDIUM STELLIGERUM ERNESTI.

ONCIDIUM STELLIGERUM ERNESTI.

[Plate 260.]

Native of Mexico.

Epiphytal. *Pseudobulbs* ovate, compressed, ribbed, two to three inches high, diphyllous, with accessory leaves from the base. *Leaves* ligulate-oblong acute, keeled behind, of a bright green. *Scape* green, produced from the base of the pseudobulb in the axil of an accessory leaf, bearing a many-flowered panicle, each flower supported by a green pedicel with a small brown ovate bract at its base. *Flowers* yellow spotted with brown, two and a half inches across, fragrant; *sepals* lanceolate acuminate, about an inch long, pale yellow heavily spotted except on the upper third with deep chestnut brown; *petals* of the same size, form and colour, the spots or blotches smaller and more numerous; *lip* sessile, three-lobed, the lateral lobes large, broadly rounded, venosely striate, of a brighter chrome yellow with a few crimson lines on the disk; the front lobe three-fourths of an inch broad, cordate, cuspidate, separated by a constriction just beyond the crest, light reddish brown with the margin slightly repand and gently undulated; disk bearing a crest of four raised lamellæ of a brownish crimson colour, free as well as prominent at the extremities, the two centre ones longer with a projecting ovate acute point. *Column* orange-yellow at the base, with prominent margins, the upper part bearing a pair of broad rounded pale yellow wings, the stigmatic hollow margined with a line of pale brown.

Oncidium stelligerum Ernesti, *Williams MS.*

This beautiful *Oncidium stelligerum Ernesti* is a great advance on the species, which has been an inmate of our Orchid houses for some years, and appears to be closely allied to Lindley's *O. hastatum;* it is, however, distinct among this large class of Orchids. Many of the Oncidiums are very beautiful, especially some of the latest additions to the genus, a considerable number of which will thrive with the Odontoglots in a cool house, a fact which makes them more sought after, as it gives to everyone an opportunity to cultivate them.

The subject of our illustration is a most distinct and splendid variety of the *stelligerum* type, and will thrive in the cool Orchid house, or at the coolest end of the Cattleya house. We owe our figure, which, through our limited space, represents only a portion of the branched spike, to the kindness of R. J. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell, in whose fine collection it bloomed during the present year, and was exhibited before the Royal Horticultural Society at South Kensington, on July 27th, 1886, where it was awarded a First Class Certificate. It is named in honour of Mr. Measures' son, Ernest, who takes a great interest in this noble class of plants.

Oncidium stelligerum Ernesti is of evergreen habit, and as yet is very rare; it is a free-flowering plant, and produces its panicle of blossoms from the sides of its pseudobulbs when the growth is completed; the sepals and petals are yellowish with dark brown spots, the lip broad and of a delicate rose colour or light reddish brown. It blooms during the summer months, and lasts several weeks in flower.

This Oncidium is best grown in a pot with good drainage and rough fibrous peat and sphagnum moss, and requires a moderate supply of water in the growing season, and an abundance of light and air. We find the species grows well in the cool Odontoglossum house, at the warmest part, and we have no doubt that this variety will thrive with the same treatment as the species. It may be propagated by dividing the pseudobulbs, a young growth and two old bulbs being retained to each division, as it would not be safe to have less to support the young growth. After they are divided, place them in small pots until they are well established, and then give them larger pots as they require it; but it should be remembered that over-potting is dangerous with all kinds of Orchids.

Cypripedium Spicerianum.—We have received from C. Walker, Esq., Brettagh Holt, Milnthorpe, Westmoreland, some fine flowers of *Cypripedium Spicerianum*, of which one spike bore two blossoms of good colour and large size. Some foliage was also sent with the flowers, which shows good cultivation, being fourteen inches in length, one and a half in width, and of a fine dark glossy green colour. The flowers were sent to us for illustration, but we have already figured this species in our third volume, Plate 119. We, however, have now the pleasure to record the treatment by means of which Mr. Walker's gardener, Mr. McGregor, is enabled to secure such success in their cultivation. He writes:—"We have about forty plants in four-inch pots and pans up to eighteen inches, and these plants bore one hundred and thirty flowers open at one time, with many buds to follow, the flowers being similar to those enclosed; we have six scapes with two flowers on each. We grow them all in the East India house, and keep them very wet all the year round, and, under this treatment, the foliage gets longer each year. We have sent you two leaves as samples." As Mr. Walker observes: "It is one of the finest Cypripediums in cultivation, and one that everybody admires." There is no doubt that Mr. Walker's plants have thorough drainage beneath a good open material so that the water passes through it readily. We have found this *Cypripedium* to require a great deal of moisture. We syringe our plants every day in spring and summer, and find them better for it; it does the growth good, and is also useful in keeping down the thrips, which Cypripediums are subject to. We have described Mr. Walker's treatment, but that might not suit in every locality, as a great deal depends upon the situation and construction of the houses. Hence it is most important in Orchid culture that locality and situation should be made a study. Our advice, therefore, would be:—Try the above treatment at first in a small way for two years, and, if it answers, then continue it.—B. S. W.

CATTLEYA SPECIOSISSIMA BUCHANANIANA.

[Plate 261.]

Native of Venezuela.

Epiphytal. *Stems* oblong, deeply and closely furrowed, attaining from six to eight inches in height, monophyllous. *Leaves* of a shining dark green colour, paler beneath, leathery, ligulate-oblong, with a short recurved acute point, hence appearing obtuse and bilobed when seen from above. *Scape* two or more flowered, issuing from a spathe at the top of the stem, and developed after the leaf-growth is completed, as in the other forms allied to *C. labiata*. *Flowers* very large and magnificently coloured, measuring nearly eight inches in expansion; *sepals* lanceolate, entire, recurved at the tips, of a rosy hue, the dorsal one an inch and a quarter wide; *petals* very large, ovate, a little erose at the edges and but slightly undulated, fully three and a half inches long, and about three inches across in the broadest part, wide spreading, of a pleasing tint of streaky rose colour; *lip* convolute over the column, its front edge being continued so as to meet over the tube, about three and a half inches long, the anterior portion two inches broad, deeply biparted, the margin neatly undulated, of a rich magenta colour which fades off towards the upper margin of the tube, the throat beautifully marked on either side with blotches of yellow passing into stripes where it joins the bar of paler purplish rose which runs down the centre of the throat. *Column* included.

Cattleya speciosissima Buchananiana, *Williams and Moore*, supra.

Cattleya speciosissima is quite an old inmate of our stoves, and, although shy flowering, is, nevertheless, a very beautiful Orchid. The variety we now introduce to our subscribers is, as may be seen from our figure of it, a very fine form of *Cattleya speciosissima*, which we consider to be far in advance of the original type. There are many other handsome forms, especially one that we received from R. H. Measures, Esq., The Woodlands, Streatham, which was of a most beautiful outline and colour, and quite distinct from the above. We have also received a very fine one from A. Heine, Esq., Manchester; and a white-flowered form, with very large flowers, from M. Finet, of Argenteuil. It will thus be seen that there are many varieties of *Cattleya speciosissima*, but though some of them are of an inferior character, they are all remarkably showy plants. This *Cattleya* is, no doubt, allied to the section of which *C. labiata* is the type. Our drawing, which was taken from a good plant in the fine collection of J. Buchanan, Esq., Oswald Road, Morningside, Edinburgh, after whom it is named, was made at the end of September, a circumstance which proves it to be a most useful plant for blooming in the autumn months when Orchid flowers are scarce. The forms of *C. speciosissima* are considered to be shy bloomers, and often produce but one or two flowers on a spike.

Cattleya speciosissima Buchananiana is an evergreen plant, producing stems about eight inches in height, and which differ in shape from those of most other species. They have ligulate dark green foliage, paler beneath, and produce their flower scapes after the growth of the stems has been completed. In the flowers the petals are very large and broad, and of a pleasing rose colour; while the lip is of a fine form and of a rich magenta colour, the throat being blotched with yellow and having a purplish rose bar passing down the centre.

This variety of *C. speciosissima* requires the same treatment as *C. labiata* and *C. Mossiæ*, so far as regards root-material, potting, and temperature. The plants will thrive in baskets as well as in pots, the former being the method adopted by Mr. Grossart, the gardener, in his treatment of them; and he finds they do well under these conditions being suspended from the roof near the light. Such a position the stems require, in order that they may get well ripened, and thus be enabled to produce flowers; if they do not get their requirements in this way they are found to be shy blooming plants. They should have but little shade, and that little only when the sun is powerful. We always find the plants succeed in producing blossoms some time during the year, if they are in vigorous health, and have the growth well ripened.

The Cattleya house is the most suitable structure in which to grow and flower this species, which requires a moderate supply of water during its active growth, with perfect drainage, so that the water may pass away—this is essential, in order to keep the roots in perfect health. After the growth is completed, they will begin to show flower. The plants should never be allowed to shrivel, but the stems should always be kept plump, as they are not so thick and fleshy as those of some other of the Cattleyas. They are well worth all the trouble that can be taken with them, as they bloom at a time when the flowers of other species are nearly over.

LEOCANTE DEPPEI PUNCTATISSIMA

LYCASTE DEPPEI PUNCTATISSIMA.

[Plate 262.]

Native of Guatemala.

Epiphytal. *Pseudobulbs* rather large, about three inches in height, ovate, compressed, deeply ribbed. *Leaves* about three in number, oblong-lanceolate acute, strongly plicate, a foot high, light green, persistent. *Scapes* radical, one-flowered, proceeding from the base of the pseudobulbs after their growth is completed, erect, eight to ten inches high, clothed with large lanceolate sheathing and somewhat inflated bracts, the upper ones being the largest. *Flowers* larger than in the type, about five inches in expansion, and quite distinct in their colouring; *sepals* oblong-lanceolate, entire, the dorsal one erect, the lateral ones spreading at right angles, very slightly falcato-decurved, greenish white, all thickly covered with small rosy purple spots; *petals* much shorter, ovate, creamy white, finely dotted with purple; *lip* cucullate, three-lobed, yellow with dark purple radiating lines on the rounded side lobes, and with blotches of the same colour on the ovate acuminate reflexed anterior lobe; the disk bears an elevated ovate appendage or callus, whence a keel passes to the base of the lip.

Lycaste Deppei punctatissima, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xvi., 717; *Williams, Orchid-Grower's Manual*, 6 ed., 378.

This new *Lycaste* was introduced by us a few years ago, and when it bloomed passed into the hands of Sir Trevor Lawrence, Bart., M.P. It is a most distinct form of *Lycaste Deppei*, with beautifully spotted flowers, and is the only one of its kind that has come under our notice, so that it must be a very rare plant; but no doubt when our plate comes before those who are engaged in the collecting of Orchids they will be on the look out to secure more of it. It was named by Professor Reichenbach, to whom we sent the first flower that the plant produced. It was imported with *L. Deppei*, which is itself a pretty species when well grown, as it produces flowers profusely when the bulbs are strong and vigorous.

There are many other interesting species of *Lycaste*. One is *L. Skinneri*, which exists in great variety, and of colours which produce a fine show in winter, as they vary from pure white and purple to crimson and mauve, with other intermediate hues. *L. Skinneri* is, moreover, a remarkably free bloomer, the flowers are of long duration, and the plant is of easy culture. We owe a great debt to the late Mr. Skinner, by whom it was introduced, and after whom it is named, for his perseverance in collecting so many fine Orchids—a class of plants for which he had a great love that acted as a stimulus in collecting them.

Lycaste Deppei punctatissima is an evergreen epiphyte, with ribbed pseudobulbs about three inches in height, and from the base of these, that is to say, by

the side of the new pseudobulbs after their growth is completed, the flowers spring up. The foliage is about a foot high, and of a light green colour. The flowers are large, and very distinct from those of the species; the sepals and petals are greenish white covered with very numerous rosy or purple spots; and the lip is yellow with dark purple radiating lines on the side lobes, and blotches of the same colour on the anterior lobe. The plant lasts for several weeks in bloom, and the fact that the flowers are produced in winter makes it all the more welcome.

This variety requires the same treatment as the species, and grows well in rough fibrous peat with good drainage, being allowed a liberal supply of moisture at the roots when in vigorous growth, which is during summer. After their growth is completed the plants begin to show their flower buds, and when the scapes are about two inches high they should have a little water, in order that the blossoms may have force to develop themselves to a good size. If their wants are carefully attended to, they will prove to be free flowering as well as free growing. They commence to grow after they have finished flowering and have had a little rest, induced by limiting the supply of water until they begin to push forth these young growths. We find all the Lycastes to thrive well in a cool house, in a temperature just a trifle warmer than that preferred for *Odontoglossum crispum*. We find them to do well with *Odontoglossum grande*, which likes a few degrees of extra heat. They are propagated by dividing the pseudobulbs, so as to keep together a leading bulb and two old bulbs at its back. The divisions should be potted in the same kind of material as the established plants. The back bulbs behind the divided portion will break if they are in a free, healthy state. It is best to cut them through first, and leave them undisturbed until these back bulbs break before separating the divisions, and then to place the latter in small pots, just large enough for their roots. When they become established they should be repotted as they require it.

These plants are subject occasionally to attacks of the scale insect, which should be looked after and removed, for if allowed to infest their foliage for any length of time, or to accumulate thereon, it will soon become disfigured. Cleanliness is one of the most important items in Orchid culture, and, perhaps, more than most other attentions, helps to secure the best results.

CYCNOCHES CHLOROCHILON.

CYCNOCHES CHLOROCHILON.

[Plate 263.]

Native of Demerara and Caracas.

Epiphytal. *Stems* stout, terete, tapering, six inches high or more, deciduous, the younger ones leafy, and the older ones marked with the persistent greyish sheaths of the fallen leaves. *Leaves* ligulate-oblong acuminate, tapered to a footstalk, and below dilated into a membranaceous sheath, glaucous green, plicate. *Scapes* lateral produced in the axils of the upper leaves, generally about three-flowered. *Flowers* large, fleshy, and of singular form, resupinate, that is with the lip standing on the upper instead of the lower side of the flower as it hangs on the spike; *sepals* (dorsal) lanceolate acute, curved forwards and then reflexed, bright yellowish green, directed downwards, the lateral ones broader ovate-elliptic acute, two and a half inches long, standing near together and erect, also of a yellowish green; *petals* larger, oblong, shortly acuminate, falcate at the base, somewhat spreading but directed upwards, three inches long, of the same colour as the sepals; *lip* oblong-obovate, abruptly acute, with a prominent boss in the central part, creamy, almost white in front, the basal part yellow with a large blackish green hollow oblong blotch, and a projecting transverse obtuse triangular callus. *Column* green, directed downwards, incurved, slender, about an inch and three-fourths in length, dilated at the end, with three narrow fleshy teeth over the back of the anther.

Cycnoches chlorochilon, *Klotzsch*, in *Otto und Dietrich Allgemeine Gartenzeitung*, 1838, 225; *Lindley, Sertum Orchidaceum*, t. 16; *Hartinger, Paradisus Vindobonensis*, t. 2; *Williams, Orchid-Grower's Manual*, 6 ed., 230. *Reichenbach fil.*, in *Walpers' Annales Botanices Systematicæ*, vi., 560.

The genus of which we here introduce a representation, is one of the most curious of the Orchid family in regard to the formation of its flowers, and partly from the resemblance of the curved column to a swan's neck, is commonly called the Swan Orchid. The species now figured was introduced to this country from Demerara some fifty years ago (1838) by Messrs. Loddiges, of Hackney. There are some other attractive species included in the genus, all of which have curious flowers, and are well worth cultivating; though they do not produce showy flowers, they are, nevertheless, great favourites with some growers, and were thought much of in days gone by. We used formerly to exhibit fine specimens of these plants at the Horticultural Society's shows at Chiswick, and also at those held in the Regent's Park Botanic Gardens, and they were greatly admired on account of the grotesque formation of their conspicuous blossoms. We sincerely hope that the publication of the present illustration may have the effect of causing this group of orchidaceous plants to be sought after as they formerly were, instead

of their being, as now, neglected and little known, because seldom grown. Our drawing was taken from a plant which bloomed in the Victoria and Paradise Nurseries. There are, we believe, but few of the Orchid growers of the present day who have seen this remarkable Swan Orchid in blossom.

Cycnoches chlorochilon is a deciduous species of a vigorous habit of growth, and, moreover, of a very interesting character. The stems are fleshy, terete, and some eight or ten inches high. The flower scapes are produced from the upper part of these thick fleshy bulbs (stems), and proceed from the axils of the leaves, generally bearing three flowers, the plicate or ribbed leaves being of a light green colour, and the flowers of a yellowish green, having a large blackish green concave blotch at the base of the lip. These blossoms are developed during the summer and autumn months, and last about three weeks in perfection. The plants are of a free-blooming character, and will produce several scapes of flowers when well grown.

We find they succeed in the Cattleya house, or at the coolest end of the East India house, where they get all the light possible, but they must be shaded from the hottest sun. They will thrive well in pots if supplied with ample drainage, good fibrous peat and sphagnum moss, and liberal libations of water must be given during their season of active growth. They throw out their blossoms when the growth is almost completed. After they have finished flowering and perfected their new stems, and when the leaves are faded, give them a good rest, but do not allow them to become so dry as to cause the bulbs to shrivel. As soon as the signs of their young growths starting up are perceptible, give a little water to encourage them, and newly pot them just as they start to grow. If they should not require fresh potting they might be benefited by adding a little fresh peat, which is often a great help to the plant, and gives it renewed vigour; it also supplies new material for their roots to work in. During their rest a dry shelf will be a suitable place for them, where they get the sun during the winter months, for having thick fleshy stems they require all the light they can have. Should there not be a suitable shelf at hand, hang them up near the glass. These plants are frequently forgotten, as they are not much to look at when dormant.

ODONTOGLOSSUM CRISPUM REGINÆ.

[Plate 264.]

Native of New Grenada.

Epiphytal. *Pseudobulbs* ovate-oblong, compressed, diphyllous. *Leaves* ligulate-oblong acute, keeled beneath, the flowering bulbs having one or two accessory ones from the base. *Scapes* radical, growing in the axils of the accessory leaves, and supporting a many-flowered dense drooping raceme of numerous flowers, which have each a small ovate appressed bract at the base of its pedicel. *Flowers* fully three and a half inches deep, and as much in breadth, white, beautifully spotted with deep brownish purple; *sepals* lanceolate acuminate, wavy, entire, white, the lower two-thirds bearing from eight to ten oblong sometimes confluent spots of a deep reddish brown or chocolate colour; *petals* broader, ovate acuminate, the edges deeply and irregularly toothed, spotted like the sepals with reddish brown, the spotting mostly ranged in two lines just within the margin; *lip* oblong cuspidate, crispato-undulate, white with a yellow disk, and marked with one large spot of reddish brown near the end of the broader portion, beyond which it is shortly cuspidate, and having one or two similar spots on each side at the edge of the yellow, the base furnished with several radiating lamellæ which are lined with crimson, and having a crest of two divergent elongated ridges.

Odontoglossum crispum reginæ, *Hort. Philbrick.*

Of the numerous varieties which have been and are being introduced of the *Odontoglossum crispum* (*Alexandræ*), many are very welcome and charming additions to our collections of cool Orchids. They richly deserve the popularity they have achieved, for there are no Orchids more useful and none more accommodating than these; and those who have but a small greenhouse or even a frame to protect them may successfully cultivate them with little expense and trouble. These various floral treasures are found in different localities in their native country, and it is altogether beyond our power to imagine, much less to recount, the attractions that are yet in store for us, since new forms and colours are turning up in nearly all the more recent importations. If we were fortunate enough to live amongst these Orchidic beauties, so that we could cross them and sow the seeds in the most likely places for them to germinate and flourish, they would no doubt soon produce an abundance of plants without any further aid from man.

The Odontoglot we now figure is a most beautiful one, and was flowered in the fine collection of F. A. Philbrick, Esq., Q.C., Oakfield, Bickley. We have a photograph of this plant, which has been taken by Mr. H. Stevens, of Covent Garden, who is quite an adept at this work.

Odontoglossum crispum reginæ is, like the other forms of the Princess of Wales' Odontoglot, an evergreen plant, and should be grown in the same way as the species. When in a vigorous condition, it produces its handsome drooping racemes of flowers freely; these have the sepals and petals white, heavily spotted with reddish brown.

The treatment of the Odontoglossums of this section, as many times noted in our pages, is well understood by the majority of Orchid growers. We cannot, indeed, find any better method of cultivation than we have already described, and which we may here recapitulate. Thus for potting material they must have good fibrous peat and sphagnum moss, or the fibre from the tufted masses of the common Polypody, which have been accumulating for years on the hill tops, and on old pollard trees in our woods and forests. This material is very much used in Belgium for the Odontoglots, as well as other Orchids, and with extremely good results, which is a proof of its adaptability for the purpose. The fibre is taken from the rhizome of the Polypody, the rhizomes not being put with the fibre when used, as they would grow and the foliage produced would smother the Orchid; this fibre should be chopped up with live sphagnum moss, and these mixed make a good compost for Odontoglots. The results of this treatment, which we have witnessed during the last two years, have proved it to be most successful; we have, indeed, never seen the plants grown better than they are in many collections in Belgium, and we have in consequence been induced to try the fern-fibre for potting Orchids.

There is no doubt that if the best fibrous peat can be obtained, and the fine part is carefully shaken out of it, this is still as good a material for Orchid culture as can be adopted; there are, however, many sorts of peat, and it is difficult to get the best. We have of late been fortunate in procuring some very good fibrous peat; but there are, of course, places where peat is not procurable, which makes the Polypodium fibre useful. This, no doubt, is the chief reason why it is used in Belgium, where it is found in abundance in some parts. Grown in this way the plants require more water than when grown in the ordinary compost, as the fibre is more porous and dries up more quickly, which, however, is all the better for the plants, as the material for them to grow in cannot be too open, since most of these Orchids are, in their native country, located on trees, where they find little material about them to hold water.

J.Nugent Fitch del et lith

B.S.Wilbar

CATTLEYA TRIANÆ HOOLEANA.

CATTLEYA TRIANÆ HOOLEANA.

[Plate 265.]

Native of New Grenada.

Epiphytal. *Stems* clavate oblong, furrowed, the lower parts clothed with pale membranaceous sheaths, monophyllous. *Leaves* ligulate-oblong, blunt with an apiculus, recurved at the tip so as to appear bilobed or emarginate when seen from above, coriaceous, dark green. *Scape* two-flowered, issuing from a short oblong pale brownish green spathe. *Flowers* medium-sized, about five inches across, the lip very highly and effectively coloured; *sepals* lanceolate, entire, spreading, recurved at the apex, of a pale rosy hue; *petals* ovate with a narrowed or cuneate base, suddenly widening to a breadth of two and a quarter inches, of a deeper tint of pale rose than the sepals, the margins boldly undulated; *lip* two and a half inches long, and measuring nearly two inches across the anterior lobe, the basal portion closely involute into a tubulose form, magenta-rose on the upper side, the anterior lobe rotundate, with the edges neatly undulated, wholly of a very rich and deep magenta-purple, the deep colouring continued around the mouth over the throat, the tube pale rose below, the throat marked with a pair of curved cone-shaped blotches of a rich orange-yellow colour, turned in opposite directions, the magenta of the front lobe passing between them to a point within the tube. *Column* enclosed, clavate.

Cattleya Trianæ Hooleana, *Williams*, supra.

This lovely *Cattleya* was first flowered by Arthur Potts, Esq., Hoole Hall, Chester, and is another striking instance of the wonderful variability of Triana's *Cattleya*. It reminds one, at first sight, of *C. Trianæ Russelliana*; but a marked difference may be seen when the two flowers are placed side by side, the present variety being richer in colour, especially about the throat, and the sepals and petals being of a darker rose tint. Mr. Potts has been very fortunate in flowering good things among Orchids, and his latest success, as our illustration will testify, is one of which he may justly feel proud.

The growth of this variety resembles that of the type. The flowers are about six inches in diameter, the sepals pale rose colour, the petals very broad and of a deeper rose, and the lip about two inches across, the anterior portion being of a deep rich magenta-purple, while the portion around the column is also a deep magenta, which attractive colour is carried round the entire front of the lip; the throat is decorated with two obovate curved spots of a rich orange, and is faintly shaded with pale rose between them.

The flowers of this variety have the valuable property of lasting a considerable time in beauty, which is not the case with all the varieties of *C. Trianæ*, there

being some that, in consequence of their thinner texture, do not continue for so long a time as others in a good condition; a great deal of this endurance, no doubt, depends on the cultivation of the plants, and especially the conditions under which they are placed before and after the flowers become expanded. On this point Mr. Taylor, the gardener at Hoole Hall, is well informed, being a good grower of Orchids, and taking a great interest in all kinds of plants.

Cattleya Trianæ Hooleana requires the same treatment as the species, and should be potted in good rough fibrous peat and sphagnum moss, as we have recommended on several occasions in this work. The varieties of *Cattleya Trianæ* are among the most useful of our winter-flowering Orchids; they will soon be coming into bloom, and the cultivator will be looking forward to seeing new varieties among the imported plants, for which our energetic collectors have been searching during the last few years in countries where they present numerous variations, and where they grow in great profusion on the branches and trunks of the trees

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Orchids at Pickering Lodge, Timperley, the residence of G. Hardy, Esq.—We had the great pleasure of visiting this noble collection of Orchids a few days ago. We found the enormous specimens of *Cattleya* and of *Lælia*, which gained such favour at the Manchester Exhibition, and also at the Royal Horticultural Show at Liverpool and at York—at all which they were well appreciated—to be very grand. We believe the Horticultural Society of York is offering a prize of £40 this year in consequence of having such fine specimens brought before them last year. Mr. Hardy's plants are at the present time promising well. He has several large specimens of *Cattleya Mossiæ* furnished with many flowering sheaths. Of *C. Mendelii* he has a noble lot, all showing well for bloom; also fine masses of *C. Skinneri*, three feet across, showing numbers of strong flowering sheaths. *C. exoniensis* is there in the shape of a well-grown specimen; also *C. Warnerii* showing strong growths, together with many fine specimens of *C. Trianæ*, of *C. Hardyana*, a rare and beautiful species, and of *C. Mossiæ Hardyana*, both of which latter are figured in the *Orchid Album*, and both of which are grand varieties. *C. Sanderiana*, *C. Dowiana*, and *C. gigas* were all fine specimens. The specimens of *Lælia purpurata* are marvellous examples of good culture, and there are several others equally fine. The plants of *Odontoglossum crispum* are fine and those of *O. vexillarium* are doing well; of this there are several hundred plants in vigorous health which bid fair to be even finer than they were last year. We were glad to see that Mr. Hill, the gardener, has mastered the culture of the Phalænopsids, for they are in splendid condition now, compared with what they were some time ago. The specimens of *Dendrobium Wardianum* are promising well for bloom.—B. S. W.

THRIXSPERMUM UNGUICULATUM.

THRIXSPERMUM UNGUICULATUM.

[Plate 266.]

Native of the Philippine Islands and Burmah.

Epiphytal. *Stem* short, adhering to its support by coarse fleshy roots, and producing a small tuft of distichous leaves from the crown. *Leaves* ligulate-oblong, six to eight inches long, unequally and bluntly bilobed at the apex, equitant and stem-clasping at the base, coriaceous, dark green and channelled above, paler beneath. *Scapes* lateral, protruding through the leaf-base, terete below, with distinct appressed carinate bracts, the upper portion flattened and floriferous, deep purplish red, the green pedicels springing from the axils of small acute bracts. *Flowers* crowded, three to four or more in a raceme, expanded, fleshy in texture, about two and a half inches across, ivory-white, with a prettily marked lip; *sepals* oblong-lanceolate acute, spreading, one and a quarter inch long, white; *petals* spreading, resembling the sepals both in size and form and also in colour; *lip* unguiculate, three-lobed, the unguis or claw linear convex with a line ploughed out along the centre, the lamina hollow, with the lateral lobes semi-ovate obtuse, incurved, white, marked with longitudinal crimson striæ, the central lobe fleshy, three-nerved above, rounded below, with the apex papillæform, straw colour, dotted transversely with crimson. *Column* short, erect, semi-terete, produced at the base.

Thrixspermum unguiculatum, *Reichenbach fil., Xenia Orchidacea*, ii., 122.

Sarcochilus unguiculatus, *Lindley, Botanical Register*, 1840, misc. 143: *Reichenbach fil.*, in *Walpers' Annales Botanices Systematicæ*, vi., 501.

Phalænopsis Ruckeriana, *of gardens.*

This genus is but little known to Orchid cultivators, most of the species being referred to *Sarcochilus* by old authors. Our present illustration was taken from a plant which flowered in the Victoria and Paradise Nurseries, and which was sent home to us from Burmah as a supposed new *Phalænopsis*; its growth, indeed, very much resembles that of a *Phalænopsis*, but one could hardly be mistaken as to its identity upon seeing the flowers.

The leaves of this plant are from six to nine inches long, by about two inches broad, of a bright green above and pale green below, and they are produced exactly in the same way as those of a *Phalænopsis*. The flower spikes issue from the side of the stem amongst the lower leaves, and take a downward turn, the blossoms being produced close together on the apical portion of the rachis, which is somewhat thickened and flattened out. The sepals and petals are pure ivory-white, and thick in texture, the lip being still more fleshy, white, barred with reddish crimson. The flowers are developed during the summer months, but they last only a very short time in perfection.

Thrixspermum unguiculatum requires to be grown either in a basket or pot. It is best suspended from the roof, as the roots invariably thrust themselves into the air, and the leaves and spikes hang over the side, as may be seen from our plate, which shows the natural habit of the plant. It should be grown in sphagnum moss, with good drainage, and must be placed at the warmest end of the East Indian house, where it should be shaded from the sun in the same manner as the *Phalænopsis*, its thick fleshy leaves being soon injured if care is not taken in this respect. These plants are found growing in their native habitats on trees, where they are partly shaded from the sun by the foliage overhead, and where they obtain a free circulation of air. In our confined glasshouses the plants require all the light we can give them, in order to enable them to mature their foliage, and give it substance to endure our long dull days and nights during autumn and winter. We have thus a great deal to guard against to successfully cultivate some kinds of Orchids.

These plants should be kept moist at their roots during summer, and even in winter they must never be allowed to become dry at the roots, as they have no thick fleshy bulbs to support them, so that they always require some nourishment ready at hand to keep them in vigorous health.

Orchids at Birchfield, Fallowfield, Manchester, the residence of A. Heine, Esq.—This collection, like Mr. Hardy's, comprises some wonderful specimens of the noble Orchid family, several houses being devoted to their growth. Mr. Heine does not care for small plants, and, his aim having been to have large specimens, he has accomplished his object and has shown to the people of Manchester that he can exhibit some noble specimens. In the Cattleya house are some enormous examples of *C. Mossiæ*, three feet or more in diameter, showing a grand lot of flower sheaths; there are many of this size, and among them some very good varieties. Of *C. Mendelii* there are equally good specimens promising well for bloom, and also of other kinds. There are some fine specimens of *Lælia purpurata* three feet across, with many flower-sheaths which will come in splendidly for the ensuing Manchester show in Whit week. The plants of *L. elegans* are well grown specimens. *Cattleya Skinneri* will be a fine sight when it brings forth its beautifully coloured blossoms.

There are some good plants of *Vanda* in this collection such as *V. suavis* and *V. tricolor*, which bloom well. The specimens of *Calanthe veratrifolia* are well grown here; *Dendrobium crassinode* has tall and strong growths, also *D. Wardianum*, *D. densiflorum*, and many other fine plants, which are well looked after by Mr. Cragg, Mr. Heine's gardener. There are many fine plants of *Lælia anceps* and *L. autumnalis* in bloom, and other Orchids were showing well for flower. Mr. Heine has imported many of his fine specimen Cattleyas and Lælias himself, and is now expecting one to arrive having some 200 bulbs or more—B. S. W.

GALEANDRA BAUERI.

GALEANDRA BAUERI.

[Plate 267.]

Native of French Guiana, Mexico, and Guatemala.

Epiphytal. *Pseudobulbs* short, ovate, the older ones marked with numerous annular scars, indicating the attachment of foliage which has fallen away. *Leaves* several, lanceolate, with a long attenuate apex and a sheathing base, three-nerved, of a pale green colour. *Scapes* issuing from the cluster of leaves forming the new growth, furnished with large linear-lanceolate membranaceous sheathing bracts, and terminating in a decurved corymbose raceme shorter than the leaves, bearing some four or five flowers; the rachis of a reddish purple, and the pedicels green with small acute sheathing bracts. *Flowers* two and a half inches long, from the top of the reflexed sepals and petals to the front margin of the lip, very distinct in character from the prominence of the high-coloured lip, and from the backward direction of the sepals and petals; *sepals* linear-oblong, acute, directed backwards, nearly an inch long, of a pale yellowish olive colour varying to brownish green; *petals* similar to the sepals in form and colour, as well as in their reflexed position; *lip* large, tubulose, with an extinguisher-shaped spur as long as the pedicel, of an orange-yellow colour, the convolute sides tinged and lightly veined above with rose, the lower side yellow like the spur, the anterior lobe, which is an inch and a half long and nearly as much across, rounded in front, deeply emarginate crenulate-denticulate, deep veiny purple-crimson as far back as the mouth of the tubulose base, below which it is yellow, within the throat purple, somewhat paler towards the edge, and the extreme margin white. *Column* erect, winged.

Galeandra Baueri, *Lindley, Botanical Register*, 1840, t. 49; *Paxton's Magazine of Botany*, xiv., 49, with a plate; *Bateman, Orchidacea of Mexico and Guatemala*, t. 19; *Puydt, Les Orchidées*, 195, *fig.* 195; *Bauer, Illustrations of Orchidaceous Plants*, t. 8; *Reichenbach fil.*, in *Walpers' Annales Botanices Systematicæ*, vi., 649; *Williams, Orchid-Grower's Manual*, 6 ed., 327.

Galeandra is a small genus of very ornamental Orchids, containing only about six species, which are found wild in Tropical America, Brazil and Mexico. They deserve to be more generally grown than is now the case, as they are not difficult to cultivate, and although some of the species are small-flowered, and not very beautiful, they are still very interesting.

Galeandra Baueri is by no means a new inmate of our Orchid houses, having been introduced many years ago. This plant used to be shown at Chiswick by J. H. Schröder, Esq., in the form of well-flowered specimens, which we have never seen equalled since. When grown in the manner indicated below, it makes an excellent exhibition plant; and we hope, now that there has been a large importation of it, to see our present cultivators succeed fully with it, and to equal, if not

improve, upon the specimens of the olden times above referred to. Until quite recently, this plant was very scarce.

Galeandra Baueri has pear-shaped pseudobulbs, varying in size, and the leaves are several in number, lanceolate and three-nerved. The flower-spike is produced from the centre of the young growths when their development has been about half completed, and is clothed with sheathing leafy bracts, the blossoms having the sepals and petals tawny or brownish green, and the large funnel-shaped lip, which is rolled round the column, purple in front with the throat yellow. It flowers in June, July and August, and lasts in perfection for a long period.

This plant is best grown in a pot, in a compost of peat and sphagnum moss, with plenty of drainage. It should be placed in the East India house, in a position where it may obtain all the light possible, or if a sunny position can be found for it all the better. After flowering it should be allowed a good rest, as it is of deciduous habit. The plants should have all the care possible by placing them on a shelf or hanging them up near the glass, so that they can have all the light which is accessible in order to ripen their pseudobulbs, which is of great importance in the culture of all deciduous Orchids, especially where they have thick fleshy bulbs to mature, as these will often decay if they are not thus exposed to the light. The placing of them in this position has a double advantage, inasmuch as the unsightly bulbs are kept out of view in a certain degree, but when so placed they must be well looked after, just sufficient water being given to keep the bulbs from shrivelling. If they are not judiciously attended to, and are watered too much, the bulbs will very often rot; they require to be kept moist during their growing season, but after their growth and flowering are completed the plants should be placed in the position recommended above. As soon as the young growth appears from the base of the bulb, give a little water to encourage the plants to start vigorously and to produce good bulbs.

They are propagated by dividing the bulbs just as they begin to grow, leaving one or two good bulbs at the back of the leading growth; after they are divided they may be put into small pots.

Well-grown Phalænopsis.—C. J. Partington, Esq., Heaton House, Cheshunt, has a well-grown collection of these favourite plants. Mr. Partington was kind enough to send us a spike of *Phalænopsis grandiflora*, with three branches containing forty flowers, each three inches in diameter. This plant, which is one of the finest we have seen for many years, has thirteen leaves, which are very large. Mr. Partington also sent us a notable spike of *P. Sanderiana*, of a very good variety, with large flowers. The Phalænopsids are grown to perfection at Heaton House, many large specimens being in the collection, in the finest possible condition. At the time of our visit there was an abundance of large branching spikes, both in flower and in bud. We referred to this collection under Plate 237 of our fifth volume; but since then the plants have done wonders. Indeed, they form as fine a group of *Phalænopsis* as it has ever been our good fortune to see.—H. W.

PHALÆNOPSIS ROSEA.

PHALÆNOPSIS ROSEA.

[Plate 268.]

Native of the Philippine Islands.

Epiphytal. *Stems* very short, producing greenish fleshy roots, and a tuft of bold distichous leaves from the crown. *Leaves* elliptic-oblong acute, keeled beneath, the tip recurved, and having a sheathing base, persistent, coriaceous, eight to ten inches long, and of a bright green colour. *Scape* lateral, ascending from between the lower leaves, deep reddish purple, furnished with distinct ovate acute green bracts, and terminating in a spreading panicle, of which the rachis is flexuose towards the apex. *Flowers* nearly one and a half inch across, numerous, very elegant; *sepals* spreading, the dorsal one narrow oblong obtuse tapered to the base, seven to eight lines long, the lateral ones smaller, all of them white, flushed with pale rose along the centre, especially near their base; *petals* broader roundish ovate, spreading, coloured similarly to the sepals; *lip* ascending, three-lobed, the lateral lobes linear-spathulate oblique, incurved, rosy purple outside, and streaked with purple lines within, the middle lobe ovate acuminate, half an inch long, of a rich dark rosy purple colour, paler at the edges, the sides reflexed, the disk white spotted with purple, bearing a thin concave lunate crest.

Phalænopsis rosea, *Lindley, Gardeners' Chronicle*, 1848, 671, with woodcut figure; *Id.*, in *Paxton's Flower Garden*, ii., t. 72; *Hooker, Botanical Magazine*, t. 5212; *Lemaire, Jardin Fleuriste*, iii., t. 283; *Jennings, Orchids*, t. 27.; *Van Houtte, Flore des Serres*, t. 1645.

Phalænopsis equestris, *Reichenbach fil.*, in *Linnæa* (1849), xxii., 864: *Id.*, in *Walpers' Annales Botanices Systematicæ*, vi., 860; *Id., Xenia Orchidacea*, ii., 4.

Stauroglottis equestris, *Schauer, in Novorum Actorum Academiæ Naturæ Curiosorum*, xix., *suppl.* i., 432.

Phalænopsis rosea was first introduced, in 1848, by the late Mr. Thomas Lobb from Manilla, and since that time it has never been imported in any large quantity; in fact, one seldom sees it in any but large collections. This is to be wondered at, as when grown well, its free-branching many-flowered spikes come in as a pleasing contrast to those of the larger-flowered kinds.

The sketch from which our plate was prepared was taken from a well-grown plant in the collection of P. Lloyd, Esq., Loughton, Essex, where the Phalænopsids and other Orchids are well cultivated by Mr. Daniels, the gardener, who is remarkably successful with this particular class.

In its manner of growth *P. rosea* bears much resemblance to *P. grandiflora*, but the leaves are shorter and narrower, six to eight inches long, and of a light green colour. The flowering stem or scape is from a foot to a foot and a half in length, ascending, and, in good specimens, much branched and many-blossomed. The

flowers of this species do not all open at one time, but keep up a succession until the last bud opens. There are two or three varieties varying in size and colour. The sepals and petals are white, tinged with rose, more especially towards the centre; the front lobe of the lip is a deep rosy purple, its side lobes being pale rose. The plant flowers at different times of the year, but more generally in the autumn months, and lasts a long time in beauty.

Phalænopsis rosea requires the same treatment as the other species of the genus, and this has been fully explained under Plate 2 of our first volume.

This species is like some of the other Phalænopsids in producing young plants on the old flower-stems. These young plants should be left on until they get to a good size and are well-rooted, when they may be taken off and placed in small baskets in a compost of broken potsherds, charcoal and live sphagnum moss, in which they should send forth fresh roots. They should be shaded from the sun, but be allowed all the light possible so that they may rapidly gain strength.

Mr. Tautz's Orchids.—A rich collection of Orchids has quite recently been established by Frederick G. Tautz, Esq., at his residence, Studley House, Shepherd's Bush. When visiting that gentleman a short time since (November), we were agreeably surprised to find such a lot of good plants, as we knew that he had commenced by buying imported Orchids; but Mr. Tautz informed us that he soon discovered his error in starting thus, and had altered his plans accordingly. The result is that he has now a fine collection of good sterling Orchids, containing many rare and new species and varieties that it would be difficult to match. We noticed, in flower, a fine plant of *Lælia Wolstenholmiæ*, now very rare. Mr. Tautz was kind enough to place this plant at our disposal for figuring in the *Orchid Album*. The rare *Lælia Russelliana* was also in flower, as well as the new *Cattleya Bowringiana*, and a fine variety of *Lycaste Skinneri alba*, producing two flowers on one spike. In the Dendrobium house was a fine well-grown plant of *Dendrobium superbiens*, with a leading bulb (stem) upwards of twenty-four inches in length; this plant, which was deservedly awarded a cultural commendation at a recent meeting of the Royal Horticultural Society, is now opening two fine spikes of flowers. We are glad to find that this species is turning out to be the desirable plant we predicted it would be when we first introduced it from Torres Straits. We ourselves have at the present time thirty spikes of this beautiful Orchid in bud or blossom, some of the plants producing their spikes on four-year-old stems, and that half-way down, having produced spikes from the top downwards in successive years. There is a grand collection of Cypripediums, Cattleyas, and Vandas here. Mr. Tautz has a special fancy for Cypripedes, and possesses specimens of almost every known species and variety; the following were in flower—*Cypripedium Schlimii*, *C. Schlimii album*, *C. Sedeni*, *C. tonsum*, *C. superbiens*, *C. microchilum*, *C. conchiferum*, &c. The whole collection is in fine healthy condition, and great credit is due to both Mr. Tautz and his gardener for the excellent way in which the plants are cultivated.—H. W.

LÆLIA PURPURATA RUSSELLIANA.

[Plate 269.]

Native of St. Catherine's, Brazil.

Epiphytal. *Pseudobulbs* erect, clavate, oblong, deeply furrowed, two feet or more in height, bearing a single leaf at the top. *Leaves* narrowly oblong, obtuse and emarginate, bluntly carinate, coriaceous in texture, and deep green in colour. *Peduncle* erect, rising from between a large compressed leafy spathe at the base of the leaf, three to five-flowered. *Flowers* large, about six inches across; *sepals* linear-lanceolate, suffused with lilac; *petals* much broader than the sepals, undulated at the edges, more deeply suffused with lilac, and ornamented with a deep lilac central stripe. *Lip* large, spreading in front, convolute, and rolled over the column, side lobes very obscure, rosy lilac, passing into soft lilac at the margins, and strongly veined with rosy purple, throat light yellow, conspicuously streaked with rosy purple.

Lælia Russelliana, *Hort.; Williams, Orchid-Grower's Manual*, 6 ed., p. 366.

Lælia purpurata Russelliana, *Williams, supra.*

The distinct form of *Lælia purpurata* which we here portray is one that was named *Russelliana* many years ago, in honour of the late Provost Russell, of Falkirk, N.B., in whose collection it was blooming in great perfection, and it was, at that time, the only plant we had seen. Since then, however, large masses of the same variety have been imported, the specimens coming mixed with the importations of *L. purpurata*, from which, when out of flower, *L. purpurata Russelliana* cannot be distinguished, as it resembles the former so much in growth; however, it does not appear to be very abundant in its native habitats. We have flowered two specimens of this plant during the last two years, which we recognised at once as being the same variety as Mr. Russell's plant, and as we happily had a sketch of *L. purpurata Russelliana* by us, we could compare it with the living plant and thus establish its identity. We are glad to know that Orchid collectors have been successful in again finding this plant, as it is a chaste and beautiful variety. We are further gratified to find that many distinct and splendid forms of *L. purpurata* have been flowered during the past few years, many of them being extremely rich in the intensity of colour, some of which we hope to be able to figure. *Lælia purpurata* is undoubtedly one of our finest Orchids, and it would be difficult to conceive a grander sight than that presented by a specimen of *L. purpurata* with twenty to thirty spikes of its gorgeous flowers upon it; but such have been flowered and exhibited during the past few years. We are indebted to the kindness of F. G.

Tautz, Esq., Studley House, Shepherd's Bush, for the opportunity of figuring this rarity, in whose fine collection it bloomed last year.

Lælia purpurata Russelliana grows about two feet or more high, and has fusiform furrowed pseudobulbs, and leathery, oblong emarginate, light green leaves. The flowers are produced from the sheaths three or four together, and are of large proportions, as will be seen by our drawing. The sepals are somewhat narrow, white, suffused with lilac; petals broader than the sepals and deeper in colour, and beautifully streaked with a dark central hue. The lip is large and of a rosy lilac, softening at the edges to a pale lilac, distinctly veined with rosy-purple; throat pale yellow, also veined with rosy-purple, the colours affording an agreeable contrast, whilst as a variety it is very distinct. The plant our illustration was taken from flowered in November, but the usual time for its blooms to appear is June and July. It lasts about three weeks in beauty, and is a native of Brazil.

Lælia purpurata Russelliana requires the same treatment as the typical form. For soil in which to plant it we have found no better material than good fibrous peat and sphagnum moss, with thorough drainage, filling the pots three parts full of potsherds, and some rough fibrous peat from which all the fine part has been shaken away. Place this material on the top of the potsherds to keep the drainage open, so that the water may pass off quickly, which is of the greatest importance in Orchid culture. Stagnant water is bad for the roots of any plants; but if allowed to reach the roots of Orchids, death will speedily ensue; therefore the potting material must always be kept open by using a few potsherds and charcoal intermixed with it, which will induce the roots to grow more freely and spread over the top of the peat. We like to see this, as it is a proof they are flourishing, and enjoy the moisture and air that surrounds them, and it resembles more closely their natural manner of growth; moreover, in this manner they reap all the benefit of the warmth and air in the house. We find these Lælias require a little more heat than their near relatives, the *Cattleya Mossiæ*; they should, therefore, be placed at the warmest end of the Cattleya-house, and have all the light possible, very little shade being required during the summer—indeed, just enough to keep them from being injured by the strongest of the sun's rays is all that is necessary. Lælias must have light; therefore, place them near the glass so that their growths may be strong and vigorous. Much of the Lælia's growth is made during the autumn and winter months, when they require carefully watering during their vigorous growth, just giving enough to keep their roots a little moist, and when growth is completed, sufficient to keep the bulbs in a plump state will be ample. We are much pleased that this superb variety is under the care of Mr. Cowley, Mr. Tautz's gardener, he being a great admirer of this gorgeous family, and spares no pains in their cultivation.

AËRIDES LAWRENCIÆ

AËRIDES LAWRENCIÆ.

[Plate 270.]

Native of Tropical Asia.

Epiphytal. *Stems* erect, free growing, branched, and rooting. *Leaves* distichous, ligulate, carinate, distinctly bilobed at the apex, tightly clasping the stem at the base, ten inches or more in length and nearly two inches in width, coriaceous in texture, and rich deep green in colour. *Peduncle* axillary, drooping, terminating in a dense many-flowered raceme, upwards of a foot long. *Flowers* large and fragrant, greenish when young, becoming creamy white with age and ornamented with purple; *upper sepal* unequally cuneate, oblong, obtuse, *lateral sepals* similar but much broader, greenish, passing to waxy white, and ultimately creamy yellow, suffused at the tips with rich purple; *petals* cuneate, obtuse, same colour as the sepals; *lip* cucullate, bearing two longitudinal stripes on the disc, side lobes erect, oblong, hatchet-shaped, much enlarged, creamy yellow, mid-lacinia fringed, rich purple; *spur* incurved, considerably longer than *A. odoratum*, green.

Aërides Lawrencle, *Reichenbach fil.*, in *Gardeners' Chronicle*, n.s., xx., p. 460; *Williams, Orchid-Grower's Manual*, 6 ed., p. 108.

There is no doubt that the plant before us is the most splendid of all the Aërides that have been bloomed in this country, although there have of late been several very beautiful new species introduced, which, when well grown, are objects of attraction, independent of their sweet-scented blooms. This noble Aërides, which was purchased by Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, for the sum of two hundred and thirty-five guineas, and has been named in honour of Lady Lawrence, we may safely assert is the most magnificent species that has yet been introduced, its large raceme of flowers and its colour being simply lovely. The habit of growth resembles that of *A. quinquevulnerum*, but the flowers are distinct from it, and resemble more those of *A. odoratum purpurascens*, although they are far larger and more grand than in that variety. The flowers are more the size of *A. crispum*, but more densely set on the spike, which gives it a grand and massive appearance. This plant flowered for the first time in this country in September, 1883, having been introduced about a year previously, and it still remains rare. We have seen different varieties of *A. Lawrenciæ* in flower, but the one we here portray is the best that has come to our notice, and thoroughly representative of the species. The spike represented in our plate was sent to us from the grand collection of Monsieur le Comte de Germiny, Château de Gouville, par Fontaine-le-Bourg, France, where there exists a wonderful collection of Orchids, as well as other plants.

Aërides Lawrenciæ is a grand evergreen species, with dark green leathery foliage, ten inches in length and nearly two inches in width, arranged in a two-ranked manner, its racemes of flower being a foot or more in length, and the individual blooms large. The sepals are at first of a greenish colour, then of a waxy white, and finally yellow; the petals are flushed at the tip with purple, the middle lobe of the lip being also purple, with two purple stripes passing from the disc to the mouth of the spur, which is elongated and tipped with green. This will be found a most useful species, as it blooms at a time when Orchid flowers are scarce—that is to say, during the autumn months—and it continues in beauty about three weeks. Mr. Vincent, the gardener at Château de Gouville, flowered their specimen during October and November.

This Aërides should be grown in the East Indian house, with live sphagnum moss, either in baskets or in pots, and perfect drainage; it requires but little material about its roots—just sufficient to keep the plant firm, being all that is requisite. It produces an abundance of aërial roots, by which it obtains the nourishment necessary to its well-being from the atmospheric moisture, with which the house should be properly charged, by keeping the floors and tables continually damp.

Aërides are free-growing plants when their requirements are properly attended to; whilst there are few plants more attractive and beautiful than the different kinds of this genus, with their graceful flower spikes and rich green distichous foliage; and they impart a very distinctive character to the collections in which they are found. We regret these Vandaceous Orchids are not seen more frequently in our gardens, but fashion appears to rule, or misrule, in Orchids as well as other things. No difficulty will be found in cultivating these plants if proper attention be given and a suitable house provided for them, at the same time following the directions for treatment, during the growing and resting season, given in our *Orchid-Grower's Manual*. Many years ago, the grand specimens of Aërides that were exhibited at our old shows were admired by all beholders, and such plants may be again produced, if care and strict attention be given to the requirements peculiar to this class of plants. We are glad to see our Continental neighbours taking lively interest in these fine Indian Orchids; for in France and other Continental countries and America there appears to be a growing taste for the beauties exhibited by these noble plants, and numerous collections exist in which their cultivation appears to be thoroughly understood.

SOBRALIA LEUCOXANTHA

SOBRALIA LEUCOXANTHA.

[Plate 271.]

Native of Costa Rica.

Terrestrial. *Stems* erect, reed-like, slightly stouter than a wheat straw, twelve inches to eighteen inches high, leafy, terminated by the inflorescence. *Leaves* persistent, cuneate-oblong, acuminate, plicate, membraneous, and of a lively green, sheathing at the base, where they are dotted with black wart-like protuberances. *Flowers* upwards of five inches in diameter, deflexed, produced in a short terminal raceme, the sheathing rough imbricating bracts of which are dotted with brown; *sepals* oblong-ligulate, apiculate, recurved, white; *petals* somewhat shorter and broader, spreading, and same colour as the sepals; *lip* rolled over the column at the base, white outside, rich golden yellow in the throat, and streaked at the base with several deep orange-red lines; the expanded limb is deeply bilobed in front and crenulate on the edge. *Column* included, scarcely as long as the tubular portion of lip.

Sobralia leucoxantha, *Rchb. f., Beitr., Orch. Centr. Amer.*, p. 68; *Williams, Orchid-Grower's Manual*, 6 ed., p. 574.

We had the pleasure of figuring the very beautiful *Sobralia xantholeuca*, on plate 250 of the present volume, and a glance at our illustration, of the species now under consideration, will at once convince our readers that this is another distinct and ornamental plant. It is a rare species, and is but seldom seen in cultivation, a fact greatly to be regretted, as Sobralias are all distinct in growth and flower from the majority of Orchids.

Our drawing was taken from a fine specimen in the collection of H. Grose Smith, Esq., The Priory, St. Helens, Ryde, Isle of Wight, in whose collection it has bloomed for several years, under the care of Mr. Earle, the gardener, and where many well-grown specimens of Orchids are to be found, some of which we have alluded to in this work on former occasions, and which bear ample testimony to the care and attention bestowed upon them.

Sobralia leucoxantha is an evergreen species with reed-like stems, a foot or more in height; the bright green leaves are plicate, and form a pretty contrast with the flowers, which proceed from a sheath at the top of the completed growth. The sheaths are dotted with black warts, whilst the bracts of the spathes are spotted with brown. The flowers are large; sepals white, somewhat shorter and broader than the petals, which are also white; the lip on the outside is white, with deep golden yellow flushed with orange in the throat and disc, but passing off to white on the edge, whilst the margin is prettily undulated. The individual

flowers of this Sobralia, like others of the class, are very fugitive, but they maintain a continuous succession, flowering from the same sheath for some time; as soon as one flower fades another bud appears, so that quantities of flowers are produced before the sheath is exhausted. It blooms during August and September, and is a native of Costa Rica.

This Sobralia requires the same treatment as that recommended under plate 250 for *S. xantholeuca*, where all details of culture will be found. These plants are subject to thrips and red spider, more especially if they are grown in too dry an atmosphere, combined with high temperature; but if our cultural instructions are followed out they will not be so liable to these pests. The red spider may be kept in subjection by carefully syringing the plants during warm weather, which will be highly beneficial to them, in addition to ridding them of their insect enemies; a sponge and clean water should also be frequently applied for the removal of these pests, as, if allowed to remain, they greatly disfigure the foliage by robbing the plant of its juices, which they cannot long endure, but will speedily get into an unhealthy condition and dwindle away. Cleanliness, although one of the simplest, is, nevertheless, one of the most essential principles in the cultivation of Orchids. When found to be infested with pests of any kind the plants should be thoroughly cleansed, and when this is accomplished a careful and incessant watch must be kept over them, in order to prevent a relapse.

Obituary.—Thomas Moore.—We regret to record the death of Mr. Thomas Moore, F.L.S., at his residence, The Botanic Gardens, Chelsea, on New Year's Day, in the sixty-sixth year of his age. He had been suffering for some time past, but up to within a short time of his death he had been able to attend to his botanical pursuits, when a severe cold and cough overtook him, and he was compelled to keep his bed for a few days. We had a card from him only two days before the new year to say that he should, as usual (when better), be able to attend to the Botanical part of the *Orchid Album*. With the deepest regret to his family and friends he passed away on New Year's morning. His death will be felt by all who knew him, for he was a kind-hearted, and most unassuming man; always ready to give advice to those who sought it, and whatever information he gave might be safely relied upon, so that he has left a prominent name among horticulturists, both at home and abroad, and in fact with all who came in contact with him. His knowledge of plants of all descriptions was unsurpassed in any man we have known. We have travelled many hundreds of miles with him to various shows, and were often judges together, and fully recognised him to be one of the very best judges of plants we have ever met. Mr. Moore was the author of many standard works upon Ferns, both British and Exotic. He had also been associated with many horticultural works, both as editor and sub-editor, commencing his literary career with Mr. Marnock.

(Continued under Plate 272.)

TRICHOCENTRUM ORTHOPLECTRON.

TRICHOCENTRUM ORTHOPLECTRON.

[Plate 272.]

Native of Brazil.

Epiphytal. *Pseudobulbs* minute, bearing a single leaf. *Leaves* ovate-lanceolate to oblong, carinate, channelled in front, three to six inches in length, and from one inch to an inch and a half in breadth, coriaceous in texture, and deep green in colour. *Peduncles* springing from the base of the minute pseudobulbs when growth is mature, one to two-flowered; *sepals* and *petals* spreading, nearly equal, the former acute and the latter cuneate, light cinnamon-brown with lighter apices, where they are covered with minute chestnut-brown dots; *lip* flat and spreading, nearly square, bilobed in front, rich crimson-lake, paler at the margin, with a more intense-coloured blotch at each side of the yellow disc, and bearing four indistinct lines on the disc. *Column* white, with two large projecting teeth.

Trichocentrum orthoplectron, *Rchb. fil.*, *Gardeners' Chronicle*, n.s., xix., p. 562; *Williams, Orchid-Grower's Manual*, 6 ed., p. 588.

This species of *Trichocentrum* is quite an acquisition to the small-growing section of Orchids, and as it can be grown in a small compass it is peculiarly suitable for those who have but little space to allot to this favourite class of plants. It is a chaste and distinct Orchid, and has a nice appearance as seen hanging from the roof, which is the correct place to see its flowers to the best advantage; it is also very free flowering, and when grown in good masses is very effective. Our artist's drawing was taken in the celebrated collection of W. Lee, Esq., Downside, Leatherhead, and is from the same plant that gained such great admiration when exhibited at a recent meeting of the Royal Horticultural Society.

Trichocentrum orthoplectron is a beautiful dwarf evergreen epiphytal plant, with light green foliage, and forms a pretty contrast with its large and showy flowers, which are borne upon a pendulous spike some two or more inches in length, and proceeding from the base of the minute pseudobulbs. The sepals and petals are of a light chestnut or cinnamon-brown, faintly tipped with yellow; the lip is large, with a crimson-purple blotch on either side of the base, softening off towards the margin; the crest or keels at the base are nearly obsolete and deep yellow. This plant bloomed in the month of October under the care of Mr. Woolford, Mr. Lee's gardener, but we believe its flowers will be produced at various times of the year, according to the completion of its growth; the flowers last several weeks in beauty. We find this species succeed best when placed either in small baskets or pans with a few broken potsherds at the bottom to ensure good drainage, and live Sphagnum moss for its roots to ramble amongst; it requires but small space

for its roots, which delight in moisture at all times, as it has no thick pseudo-bulbs to support it when dry. These kind of plants require careful attention, and if this is accorded them they grow freely and bring forth their beautiful flowers in great profusion. The warm end of the Cattleya house appears to suit this species best, and if suspended from the roof it obtains just the light it requires, but care must be taken to shade it from the burning mid-day sun. *Trichocentrums* will also thrive on blocks or rafts of wood, but when so grown extra attention is required to provide the amount of moisture necessary to maintain their roots in a thriving condition.

(Continued from Plate 271.*)*

He was appointed Curator of the Chelsea Botanical Gardens in 1848, as successor to Mr. Fortune, since which time he has laboured most assiduously in the advancement of horticulture. He rendered great service to Dr. Lindley with the *Gardeners' Chronicle*, and when Dr. Lindley's health failed he became joint-editor of that journal with Dr. Masters, with whom he was associated for many years after the decease of Dr. Lindley. He also supplied the botanical descriptions for R. Warner's Illustrated Orchids, which undoubtedly is the finest illustrated work of the kind yet published. In his descriptions of these noble plants Mr. Moore was most exact, a fact we are in a position to vouch for, by being connected with him more closely with regard to the botanical part of the *Orchid Album*, which he had always ready to time. An excellent portrait of our lamented friend will be found in several gardening papers of the 8th of January of this year, where fuller descriptions of his life's works will be found. From our long and intimate acquaintance with Mr. Moore, we could not let such a worthy man pass from amongst us without expressing regret in these pages, and we feel persuaded our subscribers will also lament his loss. Mr. Moore has left a widow and son, by whom he will be greatly missed; but of whose honours they may justly be proud, for his name will live long in the annals of horticulture.—B. S. W.

A Two-flowered spike of Lycaste Skinnerii.—We have received from Dr. Carnus, of Louviers, France, a remarkable two-flowered spike of *Lycaste Skinneri cestalis*. The flowers are very charming; sepals very broad, of good shape and pure white; petals white, flushed with rose; lip white, beautifully marked with rose, the contrast between the sepals and the petals being very pleasing. This is not the first time we have seen a two-flowered spike of *Lycaste Skinnerii*, as we had one in our own collection last year, and we also saw one in the collection of F. G. Tautz, Esq., of Studley House, Shepherd's Bush; the occurrence is, however, very rare. Dr. Carnus has many choice Orchids in his collection, and we are glad to find that it is increasing since we last paid him a visit.—B. S. W.

MARIPOSIA PITEA MAGNANIGIANA

MASDEVALLIA IGNEA MASSANGEANA.

[Plate 273.]

Native of New Grenada.

Epiphytal. *Stems* densely tufted. *Leaves* evergreen, borne upon rather long footstalks, elliptical in shape, blunt pointed, somewhat conspicuously ribbed, coriaceous in texture, and deep green in colour. *Scape* slender, much longer than the leaves, furnished with one or two appressed narrow sheathing bracts, and supporting a single, large, trifid flower. *Flowers* upwards of two inches across; *sepals* rich bright orange-vermilion, shaded with rosy purple, three-nerved, the nerves being of a more intense colour, upper sepal subulate, deflexed, lateral ones ovate, rounded at the ends, connate to below the middle, and tapering to the acute approximate tips; *petals* small, linear-oblong, obtuse, hidden; *lip* small, hidden, furnished with a short claw, tongue-shaped, somewhat cordate at the base, white, flushed with pale rosy purple, and toothed in front. *Column* erect, rounded, and destitute of wings.

Masdevallia ignea Massangeana, *Williams, Orchid-Grower's Manual*, 6 ed., p. 393.

This is another of those richly coloured and remarkable plants, which so long remained desiderata in our gardens, and, although they were collected in vast numbers, they, for many years successively, died during their transit between their mountain homes and the port of shipment for Europe; we have now, however, quicker and better means of communication than formerly with the interior of Peru and New Grenada, and understand better how to pack these plants, and, consequently, we are more successful in their importation than was the case a few years ago.

The subject before us is a splendid variety of the typical *Masdevallia ignea*, which species is of a pleasing colour and one that is deservedly admired, owing to its being so distinct in character from many others of the genus. There are several varieties of *M. ignea*, viz.: *M. ignea superba*, which has large brilliant coloured flowers, and *M. ignea aurantiaca*, which has flowers of a bright orange, but *M. ignea Massangeana* is distinct both in the form and size of its blossoms. When this variety is well grown, it forms a beautiful object, and bears a very large number of its showy flowers simultaneously, which can be seen from our accompanying representation, which was taken from the collection of M. D. Massange de Louvrex, Chateau de Baillonville, Marche, Belgium, who is famed for the great numbers of well-grown specimen Orchids contained in his collection, and who kindly sent us this fine example for our artist to copy. It is now several years ago since we first saw this fine variety with M. Massange, and it was then it received its name, and was afterwards described in the *Orchid-Grower's Manual*, 6th edition, page 393.

Masdevallia ignea Massangeana is a handsome dwarf evergreen variety, with broad dark green foliage, the plant grows about eight inches high, and produces large flowers, which are of good substance and colour, being of a bright orange-vermilion, flushed with rose-purple, the beautiful lines down the flower contrasting well with the orange-vermilion. The flowers are of long duration, and keep their bright colours until they shrivel up. It blooms at different times of the year, but we find it is in the greatest perfection during the months of March and April, at which time our drawing was made.

This plant is of easy cultivation, and being free in growth, soon forms a specimen. It is especially useful for decorative purposes, its brilliant colours forming a rich contrast with the numerous varieties of *M. Harryana, M. Lindenii,* &c., which have, for the most part, flowers of a deeper hue. Masdevallias thrive best when grown together, and form grand objects, a statement which everyone who has seen the superb specimens at our exhibitions, bearing fifty or more flowers, will readily endorse. They look well in our cool Orchid houses intermixed with *Odontoglossum* (*crispum*) *Alexandræ* and *O. Pescatorei,* and contrast well with the snowy whiteness of their flowers. It is not only important to grow these plants well, but a considerable amount of taste is necessary to arrange them when in flower in such a manner as to produce a pleasing effect. *M. ignea* and its varieties grow naturally upon the ground, at the base of large trees, up the stems of which they ascend for a short distance only, in the wet moss which grows very thickly around them.

Masdevallias require to be grown in a cool house, the temperature varying from 45° to 50° in winter, and in summer the house should be kept as cool as possible, and shaded from the sun. We prefer a house set apart for the growth of these plants, but they will thrive well in the Odontoglossum house, especially if one end of it is devoted to them, as they make better progress associated together. In autumn and winter these plants do not require so much moisture as in summer, but many people keep them too moist during the dull months, which frequently causes the young growth to damp off, and yet, on the other hand, they do not like to be kept too dry at the roots, for as these plants continue to grow during the autumn and winter months, they require a little moisture to enable the young shoots to develope. We find good fibrous peat and sphagnum moss to suit them well with plenty of drainage, as they require a good amount of water in summer, but it requires to be carried away quickly.

ODONTOGLOSSUM PARDINUM.

[Plate 274.]

Native of Ecuador and Peru.

Epiphytal. *Pseudobulbs* about three inches in height, ovate, somewhat flattened, smooth when young and becoming wrinkled with age. *Leaves* about eight inches long and upwards of an inch broad, oblong, acute, keeled behind, bright green in colour. *Panicles* from eighteen inches to three feet or four feet long, much branched and many flowered, bracts boat-shaped, acuminate, and membranaceous in texture. *Flowers* some two or three inches across, and very fragrant; *sepals* and *petals* spreading, lanceolate, acuminate, the latter somewhat the shortest, all much waved and undulated, golden yellow, dotted and spotted with numerous brown spots; *lip* long, tapering to a point, fiddle-shaped, furnished with a short claw, golden yellow, marked with numerous brown eye-like spots; *crest* compassed with two side wings, which are toothed on the edges, the medial ridges being smooth. *Column* round, smooth, and blunt.

Odontoglossum pardinum, *Lindley*, in *Sertum Orchidaceum*, sub., t. 25; *Folia Orchidacea Art Odontoglossum*, No. 49; *Walper*, rep. v., vi., p. 841; *Botanical Magazine*, t. 5993; *Williams*, *Orchid-Grower's Manual*, 6 ed., p. 456.

Odontoglossum pardinum is a very old species, first discovered by Dr. Jamieson on the ground near Surucucho; it was afterwards found by Hartweg in the Andes of Popayan, and it has been found since on several occasions by various travellers. It flowered for the first time in this country about twenty years ago. There are many connoisseurs of Odontoglossums, some preferring the spotted kinds, of which we have already figured several species and varieties. *O. pardinum* is a very pretty distinct species, and one that cannot fail to be highly appreciated for its bright spotted flowers. There are several varieties of this plant, but the one we here figure is remarkable for its compact spike; and although we have another form with a spike three feet high and much branched, which has been flowering with us for three months, the dwarf kind, as represented on our plate, is much preferable; the panicle of this variety being eighteen inches high, the flowers set closer on the spike, and altogether producing a far more showy appearance. Our sketch was taken from a plant which flowered with us about four years ago in the Victoria and Paradise Nurseries.

Odontoglossum pardinum is a dwarf-growing evergreen species, and produces its branching flower spikes very freely from the side of the matured bulb. The blossoms are deliciously fragrant, of a pure golden yellow colour, ornamented with several small brown ocellated spots on the sepals and petals; the lip is of a deeper

yellow and spotted with large eye-like spots. It lasts a long time in perfection, and blooms chiefly during the autumn and spring months.

The treatment necessary to the well-being of this plant is the same as that previously recommended for *O. (crispum) Alexandræ* and *O. Pescatorei*, and others of this class. *O. pardinum* is a free-growing species, and is propagated by dividing the pseudobulbs, leaving about two old ones at the back of the growth that is starting at the base of the leading bulb. We find the best time to divide the Odontoglots is after they have finished blooming, when they begin to show signs of some life; by this we mean when the pseudobulbs are plump and starting to grow. The pseudobulbs of this genus will often be found to shrivel when they are in bloom, especially if the flowers are left on the plants too long; at this time they must certainly not be divided, or they will in all probability dwindle away, and ultimately die. By this it will be understood that great care is requisite in dividing Odontoglossums, and the same remarks apply to the division of all Orchids. Whenever the pseudobulb of a plant shows the least sign of shrivelling through exhaustion from flowering the spike should at once be removed; this does not result in the speedy loss of the beautiful flowers, as, when cut off, they last a considerable time in water. When the flower spike is removed the plant will soon recover and commence to make strong growth for another year. Some Orchids do not suffer by allowing the flowers to die upon the plants, of this class Lycastes may be given as an example, but we have observed that Odontoglossums are much injured and often entirely destroyed by this practice, yet no Orchids are of more easy cultivation when their requirements are well looked after. When the multiplication of Odontoglossum is accomplished by divisions they should be placed in small pots, as in this way they root more freely. They should also be kept from the sun's rays until they begin to show signs of growth, after which they will require more light and air.

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SACCOLABIUM HENDERSONIANUM

SACCOLABIUM HENDERSONIANUM.

[Plate 275.]

Native of Borneo.

Epiphytal. *Stem* short, rooting. *Leaves* about six inches long, arranged in a two-ranked (distichous) manner, strap-shaped, tapering bluntly to a point, keeled beneath, and bright green in colour. *Racemes* borne upon a short footstalk, erect, longer than the leaves, cylindrical and many-flowered, the small bracts are triangular; *upper sepal* concave, nearly circular, lateral ones oblong ovate, with the point of attachment the narrowest; *petals* similar in shape, slightly smaller, and both sepals and petals of a uniform bright rose, or rosy red; *lip* very small, being little else than three small teeth, which stand at the mouth of the spur; *spur* cylindrical somewhat compressed, slightly hooked, blunt pointed, white. *Column* short, furnished with a slender awl-shaped beak, bearing on each side a blackish purple callus.

Saccolabium Hendersonianum, *Reichenbach fil.*, *Gardeners' Chronicle*, n.s., iv., p. 356. 1875; *Botanical Magazine*, t. 6222; *Williams, Orchid-Grower's Manual*, 6 ed., p. 567.

We have in the present case the portrait of a very charming Saccolabium to lay before our Orchid admirers, and it is a species which, perhaps, many may not have before had the opportunity of seeing. It differs from some of the large showy kinds, such as *S. guttatum* and *S. giganteum*, but, nevertheless, it will maintain a reputation of being one of the most lovely of the smaller growing species, some of which we have had the pleasure already of placing before our readers in the portraits of *S. curvifolium* and *S. ampullaceum*, the former bearing bright cinnabar-red flowers, and the latter rich bright rose-coloured blossoms; there are also other small-growing kinds, with rich brilliant-coloured flowers, which we hope to illustrate at a future time. This species would appear to have been introduced from Borneo nearly thirty years ago, but was lost to cultivation very soon afterwards, it was reintroduced, however, and flowered for the first time in this country in the year 1874. These small-growing Saccolabiums are the gems of the family, and should be more extensively cultivated by lovers of Orchids, especially as they require but little room for their accomodation, and our plate fully bears out the assertion that this species is well worthy of a place in every collection. In order to cultivate these plants successfully, they should have a place especially set apart for them, so that every care can be bestowed upon them.

We are indebted to the kindness of Sir Trevor Lawrence, Bart., M.P., for allowing our artist to make the accompanying portrait of this elegant plant, whose collection is well known to contain so many choice and unique examples of Orchids. We have

also seen the same species in bloom with W. Lee, Esq., and with R. H. Measures, Esq., Streatham, in whose collections there are several well-grown plants.

Saccolabium Hendersonianum much resembles a small species of Phalænopsis, with its compact bright green graceful foliage; the flower spikes, which stand erect, proceed from the axils of the leaf, and have a pretty appearance, being so densely studded with their bright rose-coloured blossoms; the lip is white, reduced to little besides the spur. *S. Hendersonianum* thrives well either on a block or in a small basket, with good drainage and sphagnum moss, but these small-growing species require very little material of any kind about them; a few small lumps of charcoal placed about their roots for them to cling to is beneficial, and, if the roots grow outside the material, allow them to remain, as it is a proof that they enjoy their treatment, growing as they do on trees in their native country, they naturally receive and derive most benefit from the dews and moisture that surround them. In the house, under cultivation they should be suspended from the roof, near the light, but shaded from the burning rays of the sun, but in the early morning, before the sun attains power, exposure will not harm them if the foliage is dry. They have no stout pseudobulbs to support them, but their leaves are thick and fleshy in texture, and, if they become injured by the sun, or from any other cause, the plants are permanently disfigured. This Saccolabium should be grown in the East Indian house, and kept rather moist about the roots, more by evaporation than any other way, as these plants do not like much water about them at any time; but, of course, they require most during the summer months, but otherwise in winter they should never be allowed to get dry. When the material about the roots shows signs of decay, it should at once be removed, and fresh given, taking special care the operation is performed without breaking the roots; the stem should also be examined, and, if it shows any decay at the bottom, the infected part should be cut away, and this will give fresh vigour to the plant. *S. Hendersonianum* being a very free flowering species, the dense racemes of bloom are a very severe strain upon the health and constitution of the plant, therefore do not allow it to become exhausted through remaining in flower for too long a time. Insects must be kept away from these small plants, as they cannot withstand the ravages of these pests, so well as those kinds of more vigorous growth. Cockroaches especially, if not well looked after, will often eat their roots, and thereby injure their growth to an extent scarcely describable. Small slugs also, which so frequently get introduced with the sphagnum, are very injurious, their special food appearing to be young flower spikes and roots, which they eat in a most provoking manner.

J. Nugent Fitch del

ONCIDIUM SUPERBIENS.

ONCIDIUM SUPERBIENS.

[Plate 276.]

Native of Venezuela and New Grenada.

Epiphytal. *Pseudobulbs* ovate-lanceolate, somewhat compressed or flattened, from three to four inches high, becoming slightly furrowed with age, and pale green in colour. *Leaves* a foot or more long and about an inch and a half wide, linear, acute, keeled and strongly ribbed beneath, leathery in texture, deep green on the upper side but paler below. *Panicle* from two to three feet in length, branching, flexuous, bearing from fifteen to thirty flowers, bracts at the base of the pedicil upwards of an inch long, boat-shaped and somewhat acute, leathery, and soft green. *Flowers* some three inches in diameter; *upper sepal* scoop-shaped and furnished with a claw, heart-shaped at the base, recurved at the apex, and waved and crisp round the edge, chocolate-brown with a yellow marginal line; *lateral sepals* same colour, bluntly ovate, and plain at the edges; *petals* slightly smaller than the sepals, furnished with a short stout claw, oblong-cordate, recurved at the apex, crisp and waved on the edges, ground colour rich yellow, plain on the apical portion but profusely and irregularly streaked with transverse bands of chocolate-brown on the basal half; *lip* small, trulliform, eared, bearing a yellow fleshy crest at the base, and a large pointed swollen appendage on each of the ears. *Column* short and blunt, having a small curved tooth-like point on either side of the stigma.

Oncidium superbiens, *Lindley, Folia Orchidacea Art Oncidium*, No. 9; *Reichenbach fil.*, in *Linnæa*, xxii., p. 843; *Botanical Magazine*, t. 5980; *Williams, Orchid-Grower's Manual*, 6 ed., p. 508.

Oncidium superbiens, although a very old plant, is still extremely rare; it was first found, some forty years ago, by Funck and Schlim near Pamplona, and about the same time by Purdie in the province of Ocana, at an altitude of from eight to nine thousand feet. It has also been found by several collectors during the past few years, but still very sparingly, so that we conclude it is by no means plentiful in its native wilds. It is a handsome species, and brings forth long spikes of its distinct blossoms, which are large and showy in mid-winter. We first saw this plant in bloom, some ten years ago, in the select collection of Mons. F. Kegeljan, Namur, Belgium, and we have never forgotten the specimen we saw at that place. Since then we have seen it in the collection of Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, where our drawing was taken some two or three years ago, and we are glad to be able to bring it before our readers, as it is by no means a well-known species.

Oncidium superbiens, is an evergreen plant, and belongs, according to Lindley, to the section *Microchila*, which also includes *O. macranthum*, *O. serratum*, *O. xanthodon* and several others. The foliage is about a foot long, the flower scapes proceed from the base of the newly-made bulbs, and are from two to three feet in length, including a lax panicle of about thirty flowers, the individual blooms being about three inches in diameter; the sepals are chocolate-brown in colour, tipped with yellow; the petals are smaller, cordate, oblong, recurved, with a shorter and broader claw, clear yellow in the apical half but barred with chocolate in the basal portion; the lip is small, blackish-purple, with a yellow crest. This Oncidium requires the same treatment as *O. macranthum*, and is best grown in pots in the Odontoglossum-house. Good drainage is requisite and a good-sized pot; in potting it should be placed well above the rim, as it is a strong free-growing plant, and its roots spread over the pots in which they are grown. It produces its long spikes a considerable time before its flowers are fully developed. From the great length of the spike it requires some sticks to support it when in bloom. The plants belonging to this section are distinct from the majority of Oncids, and are found to be most accommodating, as they may be grown in any house having a temperature of 45° to 50° in winter; they also require to be kept cool in summer, as they are found in the temperate regions of South America at great altitudes, where is not very warm at any time in the year. This species must be kept moist at the roots during its growing and flowering seasons, but when at rest it merely requires sufficient water to keep its pseudo-bulbs in a plump condition.

PHALÆNOPSIS GRANDIFLORA

PHALÆNOPSIS GRANDIFLORA.

[Plate 277.]

Native of Java.

Epiphytal. This, like all other members of the genus, is quite destitute of pseudobulbs, but rises upon a short rooting stem. *Leaves* arranged in a two-ranked manner (distichous), broadly oblong, obtuse, keeled beneath, unequally notched at the apex, upwards of a foot in length, and from six to seven inches in breadth, thick and fleshy in texture and bright green in colour. *Scape* erect, arching, springing from the base of the leaf, thickening upwards, greenish purple, furnished with a few distant, appressed, ovate-acuminate bracts, branching with age, and bearing many flowers (20 to 80). Individual *flowers* three to four inches in diameter, snow-white. *Upper sepal* oblong-obtuse; *lateral sepals* oblong-lanceolate; *petals* very broad, spreading, roundish-oblate, not overlapping the upper sepal, and quite destitute of the little point (mucro) which is such a prominent character in its near relative, *P. amabilis*. *Lip* very narrow, linear-hastate, shorter than the lateral sepals, side lobes obliquely wedge-shaped, with obtuse angles, and stained with deep yellow on the front edges; two long tendrils (cirrhi) which spring from the point of the lip are yellow and curled inwards.

Phalænopsis grandiflora, *Lindley*, in *Gardeners' Chronicle*, 1848, p. 39, with woodcut; *Botanical Magazine*, t. 5184; *Bateman's Second Century of Orchids*, t. 114; *L'Illustration Horticole*, 1860, t. 19; *Walpers' Annales Botanices Systematicæ*, v. 3, p. 351; *Williams' Orchid-Grower's Manual*, 6 ed., p. 529.

This grand Orchid was named by Dr. Lindley in 1848, it had, however, been exhibited in flower the year previous by J. H. Schröder, Esq., late of Stratford Green, at which time it was supposed to be a fine variety only of *P. amabilis*.

We well remember this plant being first shown, and the excitement it caused in the horticultural world; the plant in question had been imported from Java, and was identical with the form which we here represent. Another variety which is found in Borneo, known as *P. grandiflora aurea*, is easily distinguished by its greenish yellow flower stems, whereas the Java plant invariably has its flower stems tinged with purple, its flowers are also considerably larger and more numerous; moreover, we believe it to be far more robust in constitution. As an example of the floriferousness of this plant, we may mention that we have ourselves exhibited it with as many as seventy and eighty flowers upon one plant, at the exhibitions which were held some years ago in the gardens of the Royal Horticultural Society at Chiswick, and also in the gardens of the Royal Botanic Society in the Regent's Park, and the same specimen was exhibited for several years successively, bearing about the same number of flowers. As may readily be imagined the plant was strong and

in robust health; it produced fresh spikes of bloom annually, but some of the old spikes were not removed, as these retained their vitality and produced lateral branches, which bore numerous flowers. About the same time we refer to, Mr. F. H. Kinghorn, of Twickenham, was also exhibiting a remarkably fine specimen of it at the London Flower Shows, bearing very large and numerous flowers, and doubtless both specimens still live in the memory of those who attended those gatherings. It is a curious and remarkable fact, that although we have many supposed natural hybrid forms of Phalænopsis, *P. grandiflora* is not credited with the parentage of a single variety.

Our drawing was taken from a fine grown specimen in the collection of C. J. Partington, Esq., Heaton House, Cheshunt, where there is a wonderful collection of Phalænopsis, which we have previously commented upon in these pages. *Phalænopsis grandiflora* is an evergreen, and the noblest species of the genus yet introduced to cultivation, having large bright green leaves, which our space, unhappily, will not allow us to render of their full size. The spike proceeds from the base of the leaf, and is two feet or more in length, graceful in outline, and bears large pure white flowers, saving a tinge of yellow on the side lobes of the lip. It blooms at various times in the year, and its large moth-like flowers retain their full beauty for a very long time.

Phalænopsis, when well grown, are unquestionably the most beautiful of all Orchidaceous plants, and although recent discoveries have brought many species and varieties to our knowledge, none can surpass either in size or purity of its blossoms the form we here figure.

These plants thrive best in a house set apart for them, as the species and varieties are numerous, and they require greater care and somewhat different treatment at all seasons of the year than almost any other members of the order. Mr. Partington's fine collection of Phalænopsis has a house entirely devoted to it, and, as before stated, all are thriving admirably; little or no material is placed about their roots at any time, which we consider one of the secrets of success in their cultivation. Mr. Searing, the gardener to Mr. Partington, is a most enthusiastic lover of these plants, and makes their wants and requirements his special study, and we are pleased to see his care and attention has been crowned with success. In their native habitats Phalænopsis are found growing upon rocks or upon the stems and branches of the forest trees, and in such positions they get but little covering to their roots; so placed they also obtain an abundance of air, whilst the heavy rains which pour down upon them in the wet season pass away quickly, so that nothing stagnant or decaying remains upon their roots.

In advocating a separate house for the cultivation of Phalænopsis, we mean this to apply only in cases where a numerous collection of these plants is maintained, but where they are few in number, they may be grown successfully in the East Indian house, with such plants as Saccolabiums and Vandas, but even then it will be best to devote a portion of the side tables especially to them. For fuller details respecting Phalænopsis and their treatment we must refer our readers to the sixth edition of the *Orchid-Grower's Manual*, p. 523

CYPRIPEDIUM INSIGNE PUNCTATUM VIOLACEUM.

CYPRIPEDIUM INSIGNE PUNCTATUM VIOLACEUM.

[Plate 278.]

Native of Northern India.

Terrestrial. Acaulescent. *Leaves* distichous, strap-shaped, keeled beneath, thin and leathery in texture, from nine to twelve inches long, and light green in colour. *Scape* erect, hairy, longer than the leaves, furnished with a large, thin and membraneous sheath, one-flowered. *Flowers* some four inches or more in diameter, bright and showy; *dorsal sepal* large, somewhat oblong-ovate, not contracted towards the base as in the variety *Maulei*, flat, slightly incurved at the top, pure crystalline-white, the central portion towards the base being soft pea-green, through which run large spots of purplish violet arranged in lines, the connate lateral sepals obovate, entire (not undulate) at the edges, downy on the under side, pale green, ornamented with spotted lines of reddish brown; *petals* spreading, ligulate, obtuse, undulate on both margins, destitute of the peculiar crimped appearance so conspicuous a feature on the upper margins of *C. insigne Maulei*, purplish or olive-green, netted with dark umber, and faintly tinged with yellow; *lip* smaller, and more compact than in the variety *Maulei*, dark chestnut-red with a slight tinge of purple. *Staminode* somewhat obcordate, furnished with a small blunt tooth-like point in the centre, yellow freckled with orange-red.

Cypripedium insigne punctatum violaceum, *O'Brien*, in *Gardeners' Chronicle*, n.s., xviii., 716, f. 127; *Burbidge, Garden*, xxi., 444, t. 342; *Williams, Orchid-Grower's Manual*, 6 ed., p. 248.

Cypripedium insigne Chantinii, *Hort.*; *L'Orchidophile*, v. 3, p. 36; *Revue Horticole*, 1878, 130.

All growers of Orchids now fully recognise the merits of *Cypripedium insigne*, a plant which we figured in the fourth volume of this work, Plate 155. The form of that species, however, which we here portray is far more beautiful than the type, and is now well known in English gardens as *C. insigne punctatum violaceum*, although, as will be seen by the references given above, it passes in continental collections by the name of *C. insigne Chantinii*. This variety was first imported into this country in the year 1855, amongst a miscellaneous lot of Orchids from Nepal, and until it flowered was supposed to be merely a typical *C. insigne*. It was first noticed by us and described as a very fine form of *C. insigne* in the 5th edition of our *Orchid-Grower's Manual*, p., 154, but at that time its full beauties had not been developed. It is a very free-blooming plant, and is a lovely object when grown into a good specimen, deserving to be extensively cultivated for winter decoration, as its robust constitution permits of its removal to the window

of the sitting-room, or any other position in the dwelling-house, without injury to either foliage or flower, whilst in the conservatory or greenhouse few plants can surpass it in beauty at this particular season of the year. The happy possessor of several plants of this variety may, by judiciously retarding some by keeping them cooler and shaded, maintain a succession of its charming flowers for some months, as its blooms last a long time in perfection.

The flowers of Cypripediums are invaluable for cutting, as they last for several weeks when placed in water or moist sand; indeed, some flowers of these plants which we cut upon the first day of the present year, and placed in water with other blooms, were quite presentable in the last days of February. For the opportunity of illustrating this beautiful variety we are indebted to the kindness of R. H. Measures, Esq., of the Woodlands, Streatham, whose collection is extremely rich in this now popular family of Lady's Slipper Orchids, this particular specimen being by far the finest of its kind which has hitherto come to our notice.

Cypripedium insigne punctatum violaceum is an evergreen, and in growth and foliage resembles the typical plant. The showy flowers rise some few inches above the leaves and are very persistent. The dorsal or upper sepal is large and broad, the white portion being also broad, which renders it very conspicuous, whilst the purple spotting is bold and effective, adding materially to the beauty of the flower; the petals are purplish green with lighter veins, suffused with yellow. The lip is dark chestnut-brown. This handsome variety produces its flowers during the winter months.

All the members of this genus enjoy a large share of light at all times in the year; so situated, they make good, strong growths and flower freely; shading should only be resorted to during the very hottest part of the day. This form still remains comparatively scarce, and upon this account it has been nursed in the warm house. We are not so sure, however, that this treatment has been beneficial to it, as *C. insigne* and its other varieties enjoy the atmosphere of a cool house, full particulars of which will be found in the fourth volume of this work, under Plate 155.

This variety may be increased easily by dividing the plants after they have finished flowering, provided that they are in vigorous health; the growths which are separated should have roots attached to them, and be placed at first in small well-drained pots, using good, rough turfy loam—the same as recommended for larger plants. When first potted, these small plants require to be kept in a shady place, up till the time root action commences; until this occurs just sufficient water should be given them to keep their foliage from shrivelling, but as new roots are developed they should be gradually inured to stronger light and a larger supply of moisture, until they are sufficiently strong to be treated as established plants.

J. Nugent Fitch del et lith

ONCIDIUM PAPILIO MAJUS.

ONCIDIUM PAPILIO MAJUS.

[Plate 279.]

Native of Trinidad, Caraccas and Venezuela.

Epiphytal. *Pseudobulbs* sub-rotund, compressed, becoming wrinkled with age, and bearing a solitary leaf. *Leaves* oblong-lanceolate, acute, deep purplish brown, conspicuously tessellated with bright green on the upper side, the under side being more frequently spotted with green on the dark ground colour. *Scape* rising from the base of the mature pseudobulb, erect, jointed, flattened, two to three feet long, furnished at the apex with a few thin membranaceous sheath-like bracts, from which the flowers issue; *upper sepal* and the *petals* erect, long and narrow, uniform in size, purplish green with a few irregular bars of dull yellow; *lateral sepals* much broader, oblong-lanceolate, deflexed, undulated at the edges, chestnut-brown, transversely streaked and barred with yellow; *lip* large and flat, nearly round, slightly bilobed in front and undulated on the edge, bright yellow with a broad marginal band of reddish brown, and bearing one or two ridges on the crest. *Column* with a small short horn on either side, and ciliate on the wings.

Oncidium Papilio, *Lindley, Genera and Species of Orchidaceous Plants*, 203; *Id., Botanical Magazine*, t. 2795, t. 3733; *Botanical Register*, t. 910; *Folia Orchidacea Art Oncidium*, No. 197; *Loddiges' Floricultural Cabinet*, t. 1086; *Knowles and Wescott, Floricultural Cabinet*, t. 12; *Paxton's Magazine of Botany*, v., 175; *Maund, Botanist*, i., t. 10; *Reichenbach, Iconographia Botanica Exotica*, t. 62; *Flore des Serres*, t. 920, t. 922; *Hartinger's Paradisus*, i., t. 9; *Williams, Orchid-Grower's Manual*, 6 ed., p. 496.

Oncidium Papilio majus, *Reichenbach fil., Catalogue Hort. Pescatore*, p. 30, 1849; *Williams, Orchid-Grower's Manual*, 6 ed., p. 497.

This very beautiful Oncidium was first introduced to our stoves from Trinidad, in the year 1823, and from that time until the present day it has always remained a great favourite, under the popular name of the butterfly-plant; from the resemblance of its flower to the form of some gaudy, tropical insect, the resemblance to which is considerably enhanced when the plants are suspended from the roof, as the blooms wave about with the least disturbance of the atmosphere, when the counterfeit appearance is complete, and the effect produced is very charming. There is no doubt that this Oncidium has been the source of more wonder and delight to amateurs than any other member of the Orchidaceous family; moreover, apart from the brilliant colours and peculiar structure, its habit of producing quantities of flowers from the same spike, extending over a long period of time, renders it a perpetual source of attraction. There are several varieties of *Oncidium Papilio*, some having smaller and less brilliantly coloured flowers than the one we here represent. Lindley also describes a white variety of this plant, and Birschell, who

travelled in Venezuela and Caraccas about the years 1856-7, sent great quantities of the typical form to England; on his return from those countries laden with Orchids, he expressed his surprise to us that none of the white variety had flowered from amongst his consignments; he said the white variety grew intermixed with the ordinary form, and that numerous examples had been gathered and forwarded by him, although not separated from the rest—be that as it may—no *albino* has yet appeared, and the white butterfly-plant still remains a desiderata in our gardens. The spikes of *Oncidium Papilio* should not be removed from the plant until they die, as the same spike will continue flowering for several years, and even when the point of the stem is exhausted it frequently produces lateral branches, which continue the display; therefore, if cut flowers are required, they should be taken singly.

Our drawing was taken from a plant in the collection of C. Ingram, Esq., Elstead House, New Godalming, which contains many examples of rare Orchidaceous plants. The leaves of *Oncidium Papilio majus* are persistent, leathery in texture, deep purplish brown in colour, conspicuously marbled, and blotched with bright green. The flower spike, which is flexuous and jointed, springs from the base of the bulb, rising from two to three feet in height; the large handsome flower being produced from a small sheath at the top. The dorsal sepal and the petals are erect, resembling the antennæ and proboscis of the butterfly, dull purple or purplish green faintly barred with yellow; the lateral sepals, which correspond with the wings of the insect, are broad, rich dark brown or chestnut-red, transversely barred with yellow; lip large and flat, bright yellow in the centre, and broadly edged with reddish brown. It blooms at different times of the year, and, independent of the succession produced by the raceme, the individual flowers last a long time in perfection. *Oncidium Papilio* may be grown in a variety of ways: some prefer them in pots, shallow pans, or in baskets, and if treated in either way success may be attained; the most natural and effective system, however, is to fasten them upon blocks of wood, and suspend them near the glass, as they delight in full exposure to the light, and require very little shading from the sun, when grown in the latter manner more moisture and greater attention is requisite; on the other hand, if grown in pots or pans they will require thorough drainage, amongst which some few lumps of charcoal should be mixed, to which the roots will cling, and from which they appear to derive much benefit, but little material of any kind is necessary about their roots; fibrous peat, from which all the fine soil has been shaken, mixed with sphagnum moss, being most congenial to them, but this must never be allowed to become sour or stagnant. A little dressing of fresh soil every year will be advantageous, and with care it may be added without in any way injuring the roots. We find the intermediate or Cattleya-house the most suitable to the well-being of this Oncidium, although it appears to thrive tolerably well in the greater heat of the East Indian-house. Mr. Bond, the gardener at Elstead House, treats this plant in the manner we have recommended above, and under this regimen it grows well and flowers profusely, whilst the variety is one of the very finest which has come to our notice.

ODONTOGLOSSUM POLLETTIANUM.

ODONTOGLOSSUM POLLETTIANUM.

[Plate 280.]

Native of New Grenada.

Epiphytal. *Pseudobulbs* flask-shaped, smooth, about three inches high. *Leaves* strap-shaped, acuminate, and deep green in colour. *Scape* rising from the base of the pseudobulbs when mature, bearing a dense raceme of bright coloured flowers. *Sepals* and *petals* lanceolate, acuminate, nearly equal, the latter somewhat the broadest, and more deeply undulate at the edges, white, suffused with purple on the under side, tinged with rose towards their apices, and profusely spotted and blotched with reddish brown. *Lip* oblong, cuspidate, the undulated edges recurved, giving it a somewhat hastate appearance; white, with a large and conspicuous reddish brown blotch in the centre, whilst the crest is stained with orange-yellow. *Column* toothed.

Odontoglossum Pollettianum, *Hort.*; *Williams, Orchid-Grower's Manual*, 6 ed., p. 458.

This appears to be another of the numerous natural hybrid Odontoglossums which have had for their parents *O. gloriosum* and *O. crispum (Alexandræ)*, and it is an extremely handsome and distinct form, as a glance at our illustration will verify, although other forms which somewhat resemble it in colour have from time to time been imported. This variety first flowered in the collection of H. M. Pollett, Esq., at Bickley, after whom it is named, and was exhibited by him before the Floral Committee of the Royal Horticultural Society, in February, 1884, when it deservedly obtained a First Class Certificate of Merit, as a new and desirable plant. Mr. Pollett has had the good fortune to flower many fine and distinct new forms of Odontoglossums, more especially amongst the spotted-flowered section. The illustration here given was taken by our artist from Mr. Pollett's original and unique plant, and may be accepted as a faithful portrait. The plant appears to be (like the majority of hybrids) of a robust and vigorous habit of growth, and a profuse bloomer. *Odontoglossum Pollettianum* is an evergreen plant with stout pseudobulbs some three inches in height, and bright green strap-shaped leaves, and it produces its fine racemes of flower from the mature growth; the sepals and petals are white, tinged with purple on the under side, heavily blotched and spotted with brown in the upper part; the lip is wedge-shaped, white, with a dark brown blotch in the centre, whilst the crest is orange. This plant produces its showy flowers during the months of February and March, lasts several weeks in bloom, and is a charming addition to the kinds which are available for late winter and early spring decoration.

The plant now under consideration requires the same treatment as other Odontoglossums of the *O. crispum (Alexandræ)* section, a class of plants we consider to be the very easiest to manage, when once their requirements are understood; yet few plants show signs of distress more rapidly when not treated in a rational manner. Too high a temperature is frequently a source of failure, and although we do not advocate an extremely cold atmosphere, we consider the thermometer should not rise above 55° during the day, nor fall below 45° at night during the winter months. Odontoglossums require an abundant supply of moisture, but water must be given in a judicious manner; rain, or, as it is popularly called, soft-water, is the most congenial to these plants, and a constant supply of this may be secured by building tanks sufficiently large; indeed, if the value of rain-water was better understood, plant growers would not allow any portion of the supply which falls from the clouds to run to waste. As an example, in the cultivation of Odontoglossums, we have frequently observed that when spring-water is used the sphagnum does not long continue in a flourishing condition, and anything that is uncongenial to the moss is equally injurious to the Orchid. This source of failure, however, is too often ignored.

Odontoglossums must be kept free from all insect pests, which, happily, is now easy of accomplishment, and unattended with danger, since we can steam with tobacco juice instead of fumigating with tobacco; the discovery of this process is a great boon to all plant growers, and especially so to the growers of Orchids, for not only may the tenderest leaved Odontoglossums be subjected to this process, but even the most delicate flowers pass through the ordeal without receiving the slightest blemish. Various kinds of molluscs must be constantly searched for, as these are most destructive in an Orchid house, the members of the genus Limax being the greatest depredators; these pests, familiarly known as slugs, are the most persistent enemies to the Orchid grower—hiding in crevices and holes by day, and issuing forth after dark upon their marauding expeditions, always selecting for their evening repast some fine flower-scape just issuing from amongst the leaves, which they either bite through and destroy, or they consume the entire top of the raceme; these must be searched for by lamp-light and killed; they may also be trapped with bran. Another pest belonging to this family is the onion snail *(Zonites alliaria)* a little brown-shelled species, deriving its name from its offensive onion-like odour when crushed; it chiefly devotes itself to the destruction of young roots and flowers, and must be carefully searched for and destroyed, as we do not know of any bait sufficiently attractive to entrap it. These molluscs are mostly introduced to the Orchid houses with the sphagnum moss and other potting material, either in a dormant condition or in the egg state, and, therefore, become permanent evils, and are a perpetual source of trouble to the cultivator. We often prepare a place of safety for the plants which are sending up their spikes by isolating a portion of the stage—raising it above the ordinary stage and setting the pedicels upon which it rests, in pans of water; but even then, if any of the leaves are allowed to touch those of non-isolated plants, they form a most convenient bridge, which the slugs are not slow to avail themselves of.

J. Nugent Fitch del. et lith.

HABENARIA MILITARIS.

HABENARIA MILITARIS.

[Plate 281.]

Native of Cochin China.

Terrestrial, with a stout fleshy tuberous underground root. *Stem* erect, from one to two feet high, leafy upwards, lower leaves four to five inches long, lanceolate acuminate, and bluish grey in colour, the upper ones becoming gradually smaller as they ascend, and sheathing. *Scape* erect, terminated by a somewhat ovate raceme, bearing numerous brilliantly-coloured flowers, which are about two inches across in their extreme length; *sepals* and *petals* green, the dorsal sepal cucullate and cymbiform, lateral ones oblong, acute and reflexed; petals linear, apiculate, adherent; *lip* flat, trifid, the lateral lobes being oblong-dolabriform and spreading, whilst the front lobe is transverse, spreading, inclining upwards, all of a brilliant scarlet, somewhat paler on the outside; *spur* filiform, compressed, acute, longer than the ovary; *rostellum* triangular, complicate, the stigmatic processes with a small sharp point standing between them.

Habenaria militaris, *Reichenbach fil.*, *Gardeners' Chronicle*, n.s., xxvi., 1886, p. 518; *L'Orchidophile*, 1887, p. 48.

Habenaria pusilla, *Reichenbach fil.*, *Or. Botanical Hamb.* 1878, p. 33.

This superb plant was discovered some years ago in the mountains of Phu Quoch, in Cochin China, by M. Godefroy-Lebeuf, and from his specimens, which were small, Prof. Reichenbach gave it the name of *Habenaria pusilla*. The plant more recently was found and brought to Europe in a living state by M. Regnier, of Fontenay-sous-Bois, near Paris, but as these examples were much larger than those brought by M. Godefroy-Lebeuf, the learned Professor no longer considered the name *pusilla* applicable to the species, and, therefore, re-named it *H. militaris*, in reference to the brilliant colour of its lip, which is as bright, or brighter than a soldier's scarlet coat.

Habenaria militaris is at present a rare plant, and one which we had not seen until it flowered with us in the Victoria and Paradise Nurseries during the autumn of last year (1886), and from which plant our artist prepared the accompanying illustration, which is a faithful portrait of this singular and beautiful Orchid. It is a plant which cannot fail to interest all growers of Orchids, as its size will enable even those with the most limited accommodation for their plants, to find space for it; whilst its colour, so rare amongst members of the Orchidaceous family, cannot but enchant all beholders. This Habenaria, like all its congeners, is a deciduous plant, losing its leaves after the flowers are past. In its native habitat it usually lies dormant from November until the following May; therefore, as its

time of flowering in this country appears to be in September and October, its season of rest naturally comes during our winter months.

This species attains a height of from one to two feet; it is erect in growth, bearing about six light green or bluish green lance-shaped leaves. The spike is terminated by a dense raceme of many long-spurred flowers, which are brilliant scarlet, with a faint tinge of rose on the upper side; beneath the lip appears as if glazed with a white film, whilst the spur is green. The flowers appear in the month of September, and last several weeks in full beauty if kept from damp or sprinklings from the syringe.

During its resting period the tuberous roots should not be allowed to become quite dry, but the soil should be kept in a nice friable condition, as it should be borne in mind that, although there are no leaves to sustain, the tubers are liable to shrivel and die if the soil becomes parched, as it assuredly would in a pot when water is entirely withheld for months in succession. The members of this genus belonging to our native flora, lie dormant in a similar manner during the winter months, at which time their condition is certainly not one of drought. Terrestrial Orchids have not hitherto been popular with growers of the epiphytal kinds, many persons being under the impression that they are very difficult to manage, and that they lack beauty; the advent of the plant now under consideration, however, must at once dispel the latter illusion. The beauty of the terrestrial Cypripediums from North America is universally admitted, so also is that of *Orchis foliosa* and *Disa grandiflora*, and we can assure our readers there are innumerable beautiful plants included in the genera *Eulophia*, *Calypso*, *Pterostylis*, *Ipsea*, *Arethusa*, *Diuris*, *Corysanthes*, *Serapias*, and others, which only require asking for in order to get them imported. That terrestrial Orchids have hitherto proved somewhat difficult to grow cannot be gainsaid, but this difficulty we opine is more imaginary than real, resulting principally from their requirements being so directly opposite to those of the epiphytal kinds; and we see no practical reason why a good grower of Gloxinias and Caladiums should not, with a little extra care, be equally successful in the management of these tuberous-rooted Orchids.

The soil for *Habenaria militaris* should consist of equal portions of turfy loam and fibrous peat, with a small quantity of rough sharp sand added, whilst the drainage requires to be kept open and free. The tubers should be planted about an inch below the surface, which must not be raised above the rim of the pot as is requisite with epiphytes. When growing, this plant should be kept in the intermediate or Cattleya house; it enjoys a fair supply of water to its roots, and is also benefited by occasional sprinklings from the syringe; this, however, must be discontinued before the flowers open. After blooming, when the plant becomes dormant, they should be removed to a cool (but not cold) place. Re-potting should be done just before growth commences, in order that the new fibrous roots receive no check after starting.

VANDA CŒRULEA.

[Plate 282.]

Native of the Khasya Hills, Northern India.

Epiphytal. Stem erect, three feet or more in height, producing at intervals numerous long, stout, flexuous roots from the stem, near the bases of the leaves. *Leaves* distichous, ligulate, channelled above, leathery in texture, and deep green in colour, they are some six or eight inches in length, unequally truncate at the apex, with a concave notch, and acute lateral lobes. *Scape* erect, much longer than the leaves, racemes many-flowered (ten to twenty), individual flowers three to five inches across. *Sepals* and *petals* nearly equal (the lateral sepals being somewhat the largest), membraneous, flat, oblong, very blunt and shortly clawed, of a uniform shade of soft blue, tesselated with lines of a deeper hue; *lip* small, deep violet, leathery, linear oblong, obtuse at the point, with two diverging lobes, bearing three lamellæ or plates on the disc, and being furnished with two triangular acuminate lobes at the base; *spur* short, blunt and curved, smooth within.

Vanda cœrulea, *Griffith's Itinerary*, p. 88; *Lindley's Folia Orchidacea, art. Vanda*, 8; *Lindley, Botanical Register*, sub. t. 30; *Warner's Select Orchidaceous Plants*, 1. t. 18; *Pescatorea*, 1. t. 29; *Reichenbach's Xenia Orchidacea*, 1. t. 5; *L'Illustration Horticole*, 1860, t. 246; *Flore des Serres*, t. 609; *Moore's Illustrations Orchidaceous Plants, Vanda*, 2; *L'Horticulture Francaise*, 1862, t. 1; *Paxton's Flower Garden*, 1, t. 36; *Williams Orchid-Grower's Manual*, 6 ed., p. 599.

This is, without doubt, one of the most handsome and remarkable species in the whole genus. It was discovered by Mr. Griffith, many years ago, on the Khasya Hills, growing in great abundance upon trees of Gordonia, in the pine and oak forests of that region, the numerous spikes of lavender-blue flowers producing a charming effect. Sir Joseph (then Dr.) Hooker also found this species in the Jaintea Hills at 3,000 to 4,000 feet elevation, growing upon small trees, in exposed situations, the roots sprawling over the rough bark; at the time this plant flowers, he says, the temperature ranges between 60° and 80°, and in winter hoar-frost forms on the ground. In Upper Assam this species grows at some 5,000 feet altitude, where there are often six or eight degrees of frost during the month of December; there it rapidly increases in size and flowers profusely. The flowers appear very soon after the rainy season is over, which is about the end of September or beginning of October, and they remain in full beauty for a considerable time. The plant was first introduced to this country in a living state by the Messrs. J. Veitch & Sons, of Chelsea, through their collector, Thomas Lobb. We well remember how enchanted we were with this Vanda, when the first plant was exhibited in the rooms of the Royal Horticultural Society in Regent Street,

now some forty years ago, when Dr. Lindley so heartily congratulated the Messrs. Veitch upon being the fortunate introducers of such a magnificent species. Since that period vast quantities have been sent home from time to time by other collectors, from amongst which several varieties have appeared, some of them much inferior to the form first received.

Our drawing was taken some time ago from a well-grown example in the collection of the Marquis of Lothian, New Battle Abbey, Dalkeith, N.B. The plant was growing in a basket suspended from the roof of the Orchid house, and produced a fine effect. It was about a foot high, with healthy well-developed foliage, and was bearing two spikes of remarkably bright blooms, fourteen flowers being expanded upon each raceme. *Vanda cærulea* is an evergreen plant, with somewhat small foliage in comparison with the size of its flowers. The leaves are about six inches in length, having truncate ends; the spikes spring from the axils of the leaves and attain a length of eighteen inches or more, and the racemes sometimes bear nineteen flowers; this, however, occurs but rarely, and only upon strong specimens; more often ten to fifteen flowers only are developed, the individual flowers measuring from four to five inches across. In the sepals and petals the colour is a delicate lavender-blue, the veins and bars being a deeper tint of the same colour; lip small and deep violet-blue. Its flowers are produced through the months of September, October, and November, and they last several weeks in full perfection. Although this species is said to grow rapidly, and attain considerable dimensions in its native habitats, it is usually of slow growth under cultivation, and requires a long time to make a large specimen. The plants flower when quite small, but this we believe retards their growth, and frequently causes their foliage to shrivel; when symptoms of this occur, the spike of bloom should be immediately removed, and as they last a considerable time in water, the removal of them not only benefits the plants, but, in addition, provides choice flowers for the embellishment of the drawing-room. *Vanda cærulea* produces quantities of large fleshy roots, few of which, however, appear to fasten upon anything, but are pushed out to absorb the atmospheric moisture. It must be admitted that the majority of Orchid growers find this a difficult plant to cultivate; we ourselves have had plants two and three feet high, well furnished with healthy leaves, which flowered annually; such plants, however, are but too seldom seen in our collections. We have ourselves found this plant very mutable; sometimes it thrives in a warm house, at other times it succeeds best in the temperature of an intermediate house; whichever position is found to suit its requirements best we invariably allow it to remain in. We have also seen this species thrive well when grown in the East India house, during the summer months, treated to light and moisture in abundance; after growth is finished the supply of water is curtailed, and the plants removed into a cool house ranging from 50° to 60° during the three or four coldest months of the year. *Vanda cærulea* should always be grown in baskets which are suspended from the roof, in order that it may obtain strong light, but it must be shaded from the sun's rays. A very moderate portion of sphagnum will be necessary if the air is kept well charged with moisture.

LYCASTE SKINNERII REGINÆ.

LYCASTE SKINNERI REGINÆ.

[Plate 283.]

Native of Guatemala.

Epiphytal. *Pseudobulbs* oblong-ovate, two to three inches high, compressed and furrowed with age. *Leaves* persistent, plaited, oblong-lanceolate, acuminate, one to two feet in length, and three to four inches in breadth, and deep green. *Scapes* radical, usually one-flowered, more rarely two-flowered, about eight inches high, stout, furnished with a few lanceolate sheathing bracts. *Flowers* large and fleshy, some seven inches in diameter; *sepals* spreading, ovate-oblong, white flushed with rosy lake; *petals* smaller, convolute over the column, oblong with recurved tips, bluntly acute, purplish crimson, shading to violet towards the base; *lip* small, concave, three-lobed, the middle lobe roundish, ovate, and deflexed, rich deep crimson. *Column* semi-terete, downy in front.

Lycaste Skinneri Reginæ, *Williams supra.*

The genus *Lycaste* does not comprise a very large number of species, but the majority of the kinds are showy and ornamental, and most of them produce their flowers during the winter months. *L. Skinneri* and its numerous varieties is undoubtedly the most showy species in the family, the splendid colours of the flowers being beautifully blended and contrasted in the different forms, added to which the blooms are very large, and being thick and fleshy in texture, they last, either on the plants or when cut and placed in water, for several weeks. We are indebted to the late Mr. G. Ure Skinner for the introduction of this plant, he having discovered it in Guatemala many years ago, and in whose honour the species was named by Dr. Lindley. The name of Mr. Skinner will doubtless remain green in the memory of many Orchid-growers, not only through the numerous kinds that he introduced, but the enthusiastic manner in which he strove to render this class of plant popular. The variety of Mr. Skinner's *Lycaste*, which we now lay before our readers, is an extremely beautiful one, and is faithfully portrayed by our artist. The drawing was taken from a fine example growing in the collection of E. A. Roberts, Esq., Greenhithe, Kent, where many fine forms of *Lycastes* and other Orchids are grown. In general habit and appearance the growth of *L. Skinneri Reginæ* resembles the typical plant, with its broad dark green plaited leaves. It produces numerous flowers from the base of the pseudobulbs, after the latter have completed their growth, these flowers measuring fully seven inches across. These plants commence to bloom during the autumn months, and those having a few plants at command can—by retarding some of them—secure a succession of these beautiful flowers throughout the entire winter. *Lycaste* blooms last a considerable time in full beauty; avoid rubbing them, however, as this is very detrimental, causing them soon to change colour and decay rapidly.

The cultivation of *Lycaste Skinneri* is now so thoroughly understood that there is little fresh to communicate on the subject, except for those who have had no experience with Orchids. To the beginners in the art, therefore, the following brief notes may be acceptable. In the first place, we find that these plants thrive best in an intermediate house, that is, a house a trifle warmer than the one usually set apart for *Odontoglossums*, say a temperature ranging from 50° to 55° during autumn and winter. In summer more heat will by no means be injurious, with a free circulation of air; at this season the thermometer may be allowed to run up to 65°, and even higher by the sun's influence. The plants must, however, be kept shaded from the sun, or the foliage will rapidly assume a sickly yellow hue. In care and attention to such small matters as these lies the difference between good and bad culture, and, although *Lycastes* are easily grown, many fail to realise the fact that it is through negligence that they get into bad condition. The pots for *Lycastes* should be well drained; the soil should be rough fibrous peat, from which all the fine soil has been shaken; and, in potting, the plants should be elevated above the rim of the pot upon a little cone or mound. In the matter of water, a liberal quantity should be given during the period of growth. When growth is completed, the water supply should diminish, just sufficient to keep the pseudobulbs from shrivelling being ample. When the flowers begin to show themselves at the base of the growths more water is necessary, and the supply should be judiciously increased up to the time when the next pseudobulbs are mature. The new growth generally pushes about the end of the flowering season, when, if necessary, the plants should be re-potted; should this, however, not be required, remove a portion of the surface of the compost, and add some fresh material, which will be found to greatly benefit the young roots.

Orchids in Flower at Gouville.—We recently received from the Comte de Germiny, Chateau de Gouville, France, a box of grand Orchid blooms, containing many fine Odontoglossums of the Alexandræ section; some of them represented finely spotted forms. There were also the pure white varieties which make such a splendid contrast when mixed together with the potted varieties, as they are in the collection at Gouville. There were also fine forms of *O. Andersonianum* and *O. hebraicum*, and varieties of *O. Ruckerianum*. *Vandas* were represented by a goodly quantity of flowers, including fine spikes of *Vanda suavis* with fine spotted sepals and petals, and a good-shaped lip of a dark hue; also *V. tricolor superba*, a fine-coloured variety, and *V. tricolor insignis*. Dendrobe flowers were also included in the box, and we understand there were out in flower at the time these blooms were cut several hundreds of spikes of Odontoglossum, Vanda, and various Orchids in the houses. At Gouville there is a fine well-proportioned house for the reception of flowering Orchids, which shows the glorious flowers off to great advantage, and Mr. Vincent, the gardener, has great taste in arranging the plants when in bloom.—B. S. W.

CYMBIDIUM GIGANTEUM

CYMBIDIUM GIGANTEUM.

[Plate 284.]

Native of Northern India.

Terrestrial. *Pseudobulbs* large, oblong, furnished with numerous, thick, fleshy, terete roots. *Leaves* ensiform, two to three feet long, distichous, broadly sheathing at the base, very prominently ribbed, and deep green in colour. *Scape* about as long as the leaves, radical, drooping from the weight of the flowers, furnished towards the base with a few lax, sheathing, membraneous scales. *Flowers* four inches in diameter, spreading, very fragrant; *sepals* and *petals* oblong, lanceolate, yellowish green, streaked with purple; *lip* three-lobed, middle lobe recurved, bright yellow, spotted with crimson, and bearing two fringed lamellæ on the disc, side lobes incurved. *Column* semi-terete.

Cymbidium giganteum, *Wallich's Catalogue*, n. 7355; *Sertum Orchidaceum*, t. 4; *Paxton's Magazine of Lindley's Genera and Species of Orchidaceous Plants*, p. 163; *Paxton's Magazine of Botany*, 12, p. 241; *Botanical Magazine*, t. 4844; *Paxton's Flower Garden*, ii., 14, f. 143; *Williams, Orchid-Grower's Manual*, 6 ed., 233.

Cymbidium iridioides? *Don's Prodromus*, p. 36.

The subject of our present illustration is a very old inhabitant of our plant stoves, and was cultivated in collections, many years ago, when few other Orchids existed in a cultivated state. Of late years this species has been a comparative outcast on account of its large and robust habit of growth, and also through the great influx of new Orchids, which so inflamed the minds of Orchid-growers for novelty, that the old-fashioned plants apparently ceased to have any attractions. The reaction, however, has fortunately set in; tastes have changed, or minds have expanded, for the greatest lovers of novelties are also eagerly asking for the old discarded species.

Cymbidium giganteum is a native of Kamaon and Nepal, where it was discovered by Dr. Wallich, who introduced it to this country about the year 1836, although the form originally sent home would scarcely be looked upon as a good variety at the present time. The genus *Cymbidium* contains many fine species, some of which have not yet reached this country in a living state. The best and most showy of the kinds that are in cultivation will be found enumerated in the *Orchid-Grower's Manual*, 6 ed., pp. 231-236.

Our artist's drawing was taken from a grand specimen, growing in the famous collection of R. H. Measures, Esq., The Woodlands, Streatham, where a house is set apart entirely for their accommodation, and where there probably exists the grandest collection of Cymbidiums to be found in any private establishment in this country, the finest examples measuring some ten or twelve feet in diameter, the largest

being *C. Lowianum*, *C. giganteum*, and *C. elegans*; these are well managed by Mr. Fraser, the energetic gardener who has the care of this collection of Orchids. *C. giganteum* is a plant of noble mien, with persistent, two-ranked sword-shaped leaves, which become dilated at the base, and closely sheath the oblong pseudobulbs; the leaves grow some three feet or more long, are gracefully arched, leathery in texture, and deep green in colour. The spike proceeds from the base of the mature growth, and is from two to three feet long, bearing a many-flowered raceme of fragrant flowers, becoming pendulous by the weight of the blooms. The sepals and petals are yellowish green, streaked with purple, whilst the lip is yellow, densly spotted round the margin with bright crimson. Flowering during the winter months this species is doubly valuable for decorative purposes, especially as its blossoms continue in beauty for a considerable time if kept free from damp.

This Cymbidium is a plant easily cultivated, but being one which produces a great quantity of stout fleshy roots, ample pot-room is necessary to accommodate it. The soil for this plant should consist of turfy loam and a little sharp sand, to which may be added some potsherds or nodules of charcoal; the soil from an old pasture where cattle have grazed, and which has been undisturbed for some years, will suit it admirably. Thorough drainage is essential, and, in potting, the crown of the plant should be kept down below the rim of the pot (and not elevated), in order to allow of a good supply of water reaching its roots; some potsherds should also be introduced with the soil to keep it open, and it should be pressed down moderately firm. During the time of growth water freely, but do not let the soil become soddened or sour, or the roots will quickly decay; when growth is finished, just enough water to keep the bulbs and leaves in a healthy condition is all they require. Cymbidiums enjoy strong heat during the summer months, which is their season of growth, but during winter a temperature ranging from 50° to 55° is all that is requisite for their well-being; strong light is essential, but they must be shaded from the sun during the hottest part of the day; treated in this manner they are sure to maintain bold handsome foliage and produce abundance of flower. Where it is desirable to have numerous plants, Cymbidiums may be increased by division, which should be effected just when the new growth begins to start.

LÆLIA ELEGANS WOLTENHOLMIA

LÆLIA ELEGANS WOLSTENHOLMIÆ.

[Plate 285.]

Native of Brazil.

Epiphytal. *Pseudobulbs* terete at the base, thickening upwards, becoming clavate and slightly furrowed, a foot and a half high. *Leaves* in pairs, oblong-obtuse, eight to twelve inches in length, and about two inches in breadth, leathery in texture, deep green on the upper side, paler beneath. *Scape* rising from a small pale green sheath, and bearing from three to six blooms; individual flowers upwards of seven inches in diameter. *Sepals* and *petals* spreading, the former lanceolate in shape, the latter broader and more ovate-lanceolate, all white, broadly margined and flaked with pale purplish rose. *Lip* large, side lobes revolute over the column, white at the base and veined with purple, stained near the throat with a large crescent-shaped rich deep purple blotch; front lobe elongate, pale rosy purple, streaked with deep purple veins, and denticulate at the edge.

Lælia elegans Wolstenholmiæ, *Reichenbach fil.*, *Gardeners' Chronicle*, 1865, p. 698; *Warner's Select Orchidaceous Plants*, II. t. xxix.; *Williams' Orchid-Grower's Manual*, 6 ed., p. 358.

This fine and very distinct variety of *Lælia elegans* was introduced into this country upwards of twenty years ago, and was originally imported amongst a consignment of the typical plant. A magnificent illustration of this variety appeared in the second series of "Warner's Select Orchidaceous Plants," taken from a plant which bloomed at Enfield, in the collection of Mr. Marshall. It had, however, previously flowered in the fine collection of J. Day, Esq., at Tottenham, and was then named by Professor Reichenbach in honour of Mrs. Wolstenholm, a sister of Mr. Day. We have seen but few examples of this Orchid, and it still remains rare, always commanding a high price; as an instance of this, we may mention a plant of it recently sold at Mr. Lee's sale, at Downside, which realised the sum of forty guineas. There are many forms of *Lælia elegans*, which differ much in habit of growth as well as in the colour of their flowers, varying from pure white in the sepals and petals, with a richly coloured lip, to forms having sepals and petals of various shades of deep rose colour; but the variety now under consideration is abundantly distinct from all of them. Our artist was enabled to take his sketch of this beautiful variety through the kindness of F. G. Tautz, Esq., Goldhawk Road, Shepherd's Bush, whose collection is famous for the numerous rare specimens and varieties it contains, and which are so exceedingly well cared for by Mr. Cowley.

Lælia elegans Wolstenholmiæ resembles the species in growth, its pseudobulbs being about eighteen inches high, surmounted by a pair of leathery dark green leaves; the spike is erect, bearing several flowers, each of which is six or seven inches across. The sepals and petals are white margined with pale purplish rose; the lip is large, white at the base, with a deep purple curved blotch towards the front near the throat. It blooms during the autumn months, and continues in beauty for several weeks. *Lælia elegans Wolstenholmiæ* requires the same treatment as *L. elegans*, that is to say, it should be placed in the warmest end of the Cattleya or intermediate house, where it can obtain the full benefit of the light, which enables the plant to thoroughly ripen its pseudobulbs, and the flowers are produced soon after the growth is matured.

The section of the genus to which this Lælia belongs requires more than ordinary attention, as these plants appear to suffer from want of moisture during their season of rest to a greater extent than the various Mexican species, and if their pseudobulbs are allowed to shrivel it is somewhat difficult to restore them to their normal plump condition. When the plant becomes unhealthy from over-drying, it should be syringed every day, if the weather is warm, or even twice a day may be found necessary; but in syringing the old bulbs, carefully avoid wetting the young growths, for it frequently happens that when the young growths are syringed water lodges in the large imbricating sheaths which envelope them, causing them to rot. This plant may be grown either in a basket or a pot, according as taste or circumstances may dictate; but, however grown, thorough drainage is of the greatest importance. The soil should be good rough fibrous peat, from which all the fine particles have been well shaken, and the plants should be elevated upon a cone of soil well above the rim of the pot, which allows the water to pass quickly away, and thus avoids stagnation and enables the roots to spread themselves, and thus derive the full benefit of the moisture in the atmosphere. Treated in the above manner, the surroundings are more natural, the growth made is finer, and the quantity of flowers produced is larger than when the roots are buried under the soil within the pots, where they become bleached and dropsical and totally unfit to maintain the plant in a sound healthy condition.

The best time to re-pot this Lælia is just when the plant commences to push out fresh roots and new growth, care being taken that any roots which may have attached themselves to the pots are not broken; it is far preferable to break a pot than to destroy a root.

The increase of the stock of this plant is effected by division, but this should never be attempted unless the plant is in vigorous health, and the divisions should be made with a sharp knife, so as to make a clean cut which leaves no straggling pieces to induce decay. After the plants are divided they should be placed in as small pots as possible, using rough fibrous peat only for soil; at this time care and attention in the matter of watering is requisite, and extra shade should be given; as they make fresh roots the extra shading should be gradually removed until it reaches the condition previously given as essential for the well-being of established plants.

DENDROBIUM PRIMULINUM

DENDROBIUM PRIMULINUM.

[Plate 286.]

Native of Northern India.

Epiphytal. *Pseudobulbs* stem-like, clustered, pendulous and deciduous, upwards of a foot long, furrowed, jointed, the joints being clothed with thin transparent sheaths. *Leaves* arranged in a two-ranked manner, narrowly oblong, obtuse, obliquely lobed at the apex, coriaceous in texture, and light green in colour. *Penduncle* short, bearing a single flower, which is from two to three inches across; *sepals* and *petals* spreading, the former oblong, the latter slightly broader and somewhat ovate, all creamy white suffused with pink, and tipped with rosy pink; *lip* downy, three-lobed, broadly-obovate, pale sulphur, or primrose-yellow, side lobes convolute over the column, and streaked with purple.

Dendrobium primulinum, *Lindley's Orchidaceous Plants*, p. 12; *Regel's Gartenflora* 1861, t. 326, p. 158; *Williams' Orchid-Grower's Manual*, 6 ed., p. 297.

Dendrobium nobile pallidiflorum, *Botanical Magazine* t. 5003.

The portrait of the Dendrobe here introduced to our readers, we had the pleasure to bloom, for the first time in this country, some thirty years ago. About that time a considerable number of plants of this species were imported, and it became very popular, and many fine specimens were staged at the various London Exhibitions; of late years, however, the plant has become scarcer, and consequently is less frequently met with. There are several varieties of this species which differ, more or less, in the size and colour of their blooms; but the form here figured is identical with that named by Dr. Lindley, and described in the *Orchid-Grower's Manual.*

We are enabled to produce our figure of this plant through the kindness of S. Courtauld, Esq., Bocking Place, Braintree, in whose collection some very handsome specimens of Orchids exist, Masdevallia being a genus in which it is specially rich, as it includes nearly all the species and varieties known to be alive in this country.

Dendrobium primulinum is a handsome free-blooming species, when the plant is vigorous, the pseudobulbs exceed a foot in length; these loose their leaves soon after the growth is matured, and during the months of April and May they are clothed with a profusion of its charming blooms, which are in the sepals and petals white, tipped with pink, whilst the lip is pale sulphur-yellow, the sides convolute, and streaked within with purple. The flowers continue in perfection for about three weeks. We find this species succeed best in a basket or pan suspended from the

roof near the light, indeed, such a position is most congenial to the majority of the Dendrobe family during their growing season. The period of growth commences just about the time the flowers open, during this time the plant should be kept in the East India house, and be abundantly supplied with water in order to induce the formation of stout pseudobulbs, without which a crop of flowers must not be expected. After the leaves have fallen the plant may gradually be inured to a lower temperature, and during this time it should be kept perfectly dry, or only just sufficient water given to keep the pseudobulbs from shrivelling; but when the flowers show signs of pushing out, the plant should be removed to a hotter and moister atmosphere. The potting material should be good, rough, fibrous peat, from which all the fine soil has been beaten and living sphagnum moss well mixed together, whilst the drainage must be perfect.

CATTLEYA MARDELLII

CATTLEYA MARDELLII.

[Plate 287.]

Garden Hybrid.

Epiphytal. *Pseudobulbs* oblong-obtuse, compressed, four to six inches in length, enveloped in a white sheath, and one to two-leaved. *Leaves* some six inches long and nearly two inches broad, leathery in texture, and deep green in colour. *Scape* terminal, issuing from between a very small sheath, erect, three-flowered, individual flowers some five inches across; *sepals* ligulate-acute; *petals* rhomboid, much broader than the sepals and waved at the edges, all bright rosy-magenta, slightly paler towards the base. *Lip* three-lobed, lateral-lobes spreading (not rolled over the column), side-lobes soft-magenta shading into white towards the centre, bearing a few radiating streaks of brown on the sides, and ornamented in the throat with a stripe of bright yellow; middle-lobe large, obovate, and crisp at the edge, rich bright magenta-purple, with a broad streak of bright yellow along the centre, which passes into the throat. *Column* broadly boat-shaped, suffused with bright magenta.

Cattleya Mardellii, *Reichenbach fil.*, new hybrid, *Gardeners' Chronicle*, v. xi., p. 234, 1879; *Floral Magazine*, 1881, t. 437; *Williams' Orchid-Grower's Manual*, 6 ed., p. 189.

This splendid hybrid Cattleya originated in the establishment of Messrs. J. Veitch & Sons, and is another of the many triumphs of Mr. Seden, several examples of whose skill, as a hybridiser, we have already had the pleasure to portray in previous numbers of the Orchid Album. The wonderful achievements of Mr. Seden have tempted many others to essay their hand in the same line, and there is every reason to hope that many startling novelties are still to be obtained by those who continue this work with patience and perseverance, without which, indeed, success need not be hoped for, as many Orchids, especially *Cattleyas*, are a long time from the germination of the seed before they attain sufficient strength to produce flowers. In order to obtain new forms and admixtures of colours and markings, it is not sufficient that the crosses are made promiscuously, but judgment and thought must be exercised in selecting the parent plants; this, however, should not be very difficult of accomplishment now that we have so many fine Orchids at hand to select from which flower at the same time. In a state of nature Orchids are fertilised promiscuously by insects, through whose agency, so many hybrids have been produced, of which numerous examples have appeared amongst recent importations. This natural crossing and intercrossing has been in operation for countless ages, and will doubtless continue until the end of time, so that there is little danger of the present generation of Orchid collectors exhausting nature's store. For the opportunity of

figuring this beautiful plant we are indebted to the kindness of W. Lee, Esq., Downside, Leatherhead, in whose fine collection this rare plant has bloomed upon several occasions.

Cattleya Mardellii, as will be seen by the portrait we here lay before our readers, is a magnificent variety, dwarf in habit and evergreen. When the plant is growing strong, the pseudobulbs attain a height of about six inches, bearing on the apex, sometimes one, but more frequently a pair of leathery, deep green leaves, between which is a small sheath, from which the flower-spike issues; it bears from two to three flowers on the spike, each being about five inches across. Sepals and petals bright magenta; lip three-lobed, the spreading side-lobes are pale magenta, shading to white towards the middle, whilst the large middle lobe is wholly bright magenta-purple, bearing a rich yellow stripe down the centre. It blooms during the months of May and June, and continues in full perfection for several weeks. Mr. Woolford, the gardener in charge of the Downside collection, has been very successful in the cultivation of this variety. He grows it in small baskets or pots suspended from the roof, and quite near the glass of a specially light house, kept at an intermediate temperature — a structure we conceive admirably adapted to the requirements of this and kindred varieties. Although this plant enjoys such full exposure to the light, it must be shaded from the fiercest of the sun's rays, or it will be disfigured by blisters upon the leaves. The soil for this Cattleya should consist of rough, fibrous peat, and living sphagnum moss, to this should be added some crocks, or what is better, some nodules of charcoal intermixed with it, which tend to keep the soil open and free; moreover, the greatest attention must be given to maintain the drainage in good working order. Should this plant become unhealthy at anytime, the old soil should be at once removed, the decayed parts cut away, and the plant washed carefully with tepid water, after which re-pot or basket in fresh soil. When it is desirable to increase this Cattleya, the root-stock should be cut through with a sharp knife, just at the time when growth commences. Care, however, must be exercised in dividing it, in order to preserve every root from the least injury. After dividing, the separate pieces should be potted in new soil, watered sparingly, and kept shaded until they have become fairly established, after which they may be subjected to the treatment previously recommended.

J. Nugent Fitch del. et lith.

B. S. Williams Publr.

DENDROBIUM TREACHERIANUM.

DENDROBIUM TREACHERIANUM.

[Plate 288.]

Native of Borneo.

A dwarf-growing epiphytal plant, with a stout, creeping rhizome, and numerous crowded pseudobulbs, which are some two or three inches high, with five or six prominent angles or ribs, bronzy-green in colour, stained with deep red towards the apex, and along the angles, and bearing a pair of leaves on the summit. *Leaves* in pairs, linear-oblong, slightly notched or bilobed at the ends, keeled beneath, three or four inches in length, and less than an inch in breadth, thick and coriaceous in texture, and deep green. *Scape* terminal, slender, issuing from a small sheath, two to five flowered, sheaths membraneous closely pressed to the scape, and reddish-brown in colour. *Sepals* linear-lanceolate, acuminate, the lateral ones connate at the base, forming a blunt spur, white, shading to mauve and streaked with vinous-purple; *petals* similar in size and shape to the dorsal sepal and slightly paler in colour; *lip* three-lobed, side lobes erect, and about the same length as the column, middle lobe somewhat cordate-acuminate, deep port-wine colour, becoming paler towards the margin, and bearing three raised lines along the centre.

Dendrobium Treacherianum, *Reichenbach fil.*, *Botanical Magazine*, t. 6591.

The plant whose portrait we have here the pleasure to submit to our readers is a very curious one in growth and habit, indeed, it more closely resembles some species of *Sarcopodium*, whilst the flowers in shape—not colour—are similar to those of *S. Lobbii*, a very pretty old plant now seldom to be met with in our gardens.

This species was introduced to this country by Messrs. Low, of Clapton, and named by Professor Reichenbach in honour of its discoverer, Mr. W. H. Treacher, Colonial Secretary of Labuan, British North Borneo. This gentleman had the misfortune to be wrecked off the Island of Socotra, on the 30th of May of the present year, whilst travelling to England on board the steamship Oder, which became a total wreck. Our drawing was taken from a well-grown plant in the collection of W. E. Brymer, Esq., Ilsington House, Dorchester.

Dendrobium Treacherianum is a compact-growing species, with small ribbed pseudobulbs, and short, leathery, dark green leaves. The flower spike is erect, produced from the top of the mature growth and bears several handsome flowers. The sepals and petals are white, flushed with pale vinous-purple along the centre; whilst the lip is dark port-wine colour, shading to white at the edge. It blooms during the winter months, and its flowers continue in full beauty for a considerable time.

Mr. Powell, who has charge of Mr. Brymer's fine collection of plants, is very successful in the cultivation of this rare species, he grows it upon a block cut from a Tree-Fern stem (Dicksonia antarctica), and, judging by the manner in which the numerous roots are penetrating the Fern stem, the plant is quite happy with its surrounding, and doubtless there are many other small growing Dendrobes which would succeed equally well, treated in a similar manner. Tree-Fern stems are very lasting, and, moreover, are not subject to attacks of Fungi, which blocks of other woods frequently are, and which are very detrimental to the roots of Orchids, whereas the moisture held by the blocks of Fern stems gradually trickles away, so that nothing stagnant is kept in proximity to the roots. Tree-Fern stems for this purpose are by no means hard to procure, as we know well, from personal experience, that many consignments of these plants perish during their transit to this country, and thus are useless for any other purpose. Orchids grown upon blocks of this description require to be frequently dipped in water, as the moisture quickly evaporates from them in hot, bright, sunny weather, but in winter they merely require to be kept slightly moist in order to supply the roots with sufficient nourishment to maintain the plants in a healthy condition.

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